

**UNITED STATES OF AMERICA  
BEFORE THE NATIONAL LABOR RELATIONS BOARD  
REGION 10**

AMAZON.COM SERVICES LLC,	)	
	)	
	)	
Employer,	)	
	)	
and	)	Case No. 10-RC-269250
	)	
RETAIL, WHOLESALE AND	)	
DEPARTMENT STORE UNION,	)	
	)	
Petitioner.	)	
	)	

**EMPLOYER’S POST-HEARING BRIEF**

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John Sharp, <i>Mail Delays Loom Over Alabama Right Before Christmas: 'Significant and Very Bad,'</i> Alabama.com (Dec. 22, 2020), <a href="https://www.al.com/news/2020/12/mail-delays-loom-over-alabama-right-before-christmas-significant-and-very-bad.html">https://www.al.com/news/2020/12/mail-delays-loom-over-alabama-right-before-christmas-significant-and-very-bad.html</a> .....	44
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Eli Rosenberg, <i>The Latest Frontier in Worker Activism: Zoom Union Meetings</i> , Washington Post (Sept. 11, 2020), <a href="https://www.washingtonpost.com/business/2020/09/10/unions-zoom-pandemic">https://www.washingtonpost.com/business/2020/09/10/unions-zoom-pandemic</a> .....	44, 50
Differences in Positivity Rates, Johns Hopkins, <a href="https://coronavirus.jhu.edu/testing/differences-in-positivity-rates">https://coronavirus.jhu.edu/testing/differences-in-positivity-rates</a> (last visited Jan. 7, 2021) .....	28, 37
How We're Taking Care of Employees During COVID-19, Amazon (last visited Jan. 2, 2021), <a href="https://www.aboutamazon.com/news/company-news/how-were-taking-care-of-employees-during-covid-19">https://www.aboutamazon.com/news/company-news/how-were-taking-care-of-employees-during-covid-19</a> .....	9
<a href="https://lawyerscommittee.org/voting-barriers-fueled-record-number-of-calls-into-election-protection-hotline-during-2020-election-season">https://lawyerscommittee.org/voting-barriers-fueled-record-number-of-calls-into-election-protection-hotline-during-2020-election-season</a> .....	51
<a href="https://www.aboutamazon.com/news/company-news/how-were-taking-care-of-employees-during-covid-19">https://www.aboutamazon.com/news/company-news/how-were-taking-care-of-employees-during-covid-19</a> .....	9
<a href="https://www.aboutamazon.com/news/operations/join-our-team-on-a-guided-video-tour-through-a-fulfillment-center">https://www.aboutamazon.com/news/operations/join-our-team-on-a-guided-video-tour-through-a-fulfillment-center</a> .....	8
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<a href="https://www.nlr.gov/sites/default/files/attachments/pages/node-3617/total-closed-cases-fy-2020-pdf.pdf">https://www.nlr.gov/sites/default/files/attachments/pages/node-3617/total-closed-cases-fy-2020-pdf.pdf</a> .....	60
<i>More Than One Million Packages Will Not Reach Their Destination This Christmas</i> , CBS News (Dec. 24, 2020), <a href="https://www.cbsnews.com/news/holiday-shipping-delays-million-packages-christmas/">https://www.cbsnews.com/news/holiday-shipping-delays-million-packages-christmas/</a> ;	44
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Representation—Case Procedures, Final Rule, 79 Fed. Reg. 74,308 (Dec. 15, 2014) (“2014 Final Rule”) .....	43, 60
Representation—Case Procedures, Final Rule, 84 Fed. Reg. 69,524 (Dec. 18, 2019) .....	45
Steve Benen, <i>A Hurdle for Young Voters: Unfamiliarity With the Post Office</i> , MSNBC (Oct. 31, 2018) (in context of 2018 general election, discussing young voters’ reluctance to vote by mail due to unfamiliarity with USPS), <a href="https://www.msnbc.com/rachel-maddow-show/hurdle-young-voters-unfamiliarity-the-post-office-msna1159941">https://www.msnbc.com/rachel-maddow-show/hurdle-young-voters-unfamiliarity-the-post-office-msna1159941</a> .....	54
WAFF 48 Digital Staff, <i>USPS Experience Delays at Birmingham Distribution Center</i> , WAFF 48 (Dec. 19, 2020), <a href="https://www.waff.com/2020/12/19/usps-delays-birmingham/">https://www.waff.com/2020/12/19/usps-delays-birmingham/</a> .....	44

## I. INTRODUCTION

Manual elections permit in-person supervision of the election, promote employee participation, and serve as a tangible expression of the statutory right of employees to select representatives of their own choosing for the purpose of collective bargaining, or to refrain from doing so. These reasons remain valid today and continue to support the Board's longstanding preference for manual elections.

— National Labor Relations Board (*Aspirus Keweenaw*, 370 NLRB No. 45, slip op. at 1 (Nov. 9, 2020))

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That was the conclusion of the full National Labor Relations Board (“NLRB” or “Board”) less than two months ago when it addressed how to conduct representation elections during the pandemic. The question here is whether the Regional Director should ignore the Board's stated “longstanding preference for manual elections” for employees of Amazon.com Services LLC (“Amazon” or “Employer”) at the Bessemer, Alabama fulfillment center (“BHM1”). Amazon contends that the Regional Director should adhere to the Board's longstanding preference and direct a manual election for the following reasons, which Amazon explains further below:

- The *Aspirus* factors do not authorize the Regional Director to depart from the Board's strong preference for manual elections because none of the factors are met in this case.
- A manual election can be held safely outdoors at BHM1. Amazon has implemented protocols and processes to protect everyone who will be involved in the election process, including NLRB personnel and the voters.
- A mail-ballot election in this case involving more than 6,000 potential voters will very likely result in significant and unnecessary delays and logistical challenges, substantially lower voter turnout, and thus *predictably disenfranchise* not tens or even hundreds, but *thousands* of Amazon's associates. It also will unfairly restrict Amazon's right to communicate with its employees during what will likely be a lengthy mail-ballot period.

Petitioner, the Retail Wholesale and Department Store Union (“Petitioner” or “Union”), currently prefers a mail-ballot election, ostensibly for safety reasons. But the striking facts of this case show that the Union’s speculation and fears of virus exposure present no grounds for disregarding the Board’s traditional preference for manual elections:

- Amazon is proposing an outdoor manual election under *very safe* conditions, and there is no objective basis to conclude that there is a marginal increased risk in virus spread within the manual election zone.
- Since the pandemic began in March, thousands of employees, including all eligible voters, have been working on-site—not remotely—at BHM1 under detailed safety protocols.
- Mail ballots will cause a predictable and substantial drop in voter participation levels—per the Board’s own analysis, it is likely that an additional 1,800-plus employees *will not vote* in a Board mail-ballot election as compared to a Board manual election.
- The absence of Board in-person supervision during a mail-ballot voting period creates a greater likelihood of election-related disputes, litigation, and mischief.
- Processing and counting thousands of mail ballots presents a massive administrative burden on the Region, Amazon, and the Petitioner.

When the Union filed its petition for a unit that it believed was only 1,500 employees on November 20, 2020, even with heightened infection concerns given the approaching holidays, the Union itself asked the Region to hold a manual election. What was true then is true now—a manual election will not jeopardize safety in the least. The voters all will be coming to the voting site to work, as they have throughout the pandemic, whether the election is held in person or by mail. All the medical experts, including the Union’s, acknowledge that the outdoor election protocols and processes planned for BHM1 make it a much safer place than the general community. In fact, the Union’s expert has acknowledged that, with proper safeguards (such as masking, handwashing, and social distancing), an in-person election can be held safely. And it also remains true, as the Board stressed in *Aspirus*, that the National Labor Relations Act



(“NLRA” or the “Act”) supports Board manual elections because Board mail-ballot elections command dramatically lower turnouts.

*Aspirus* offered some guidelines for Regional Directors deciding whether to direct a manual or mail-ballot election during the COVID-19 pandemic in a typical case. But this is no typical case, and the proposed bargaining unit is no typical unit. Its size—nearly 6,200 employees<sup>1</sup>—is to Amazon’s knowledge the largest group of employees, by far, who will participate in a Board election since the COVID-19 pandemic began. When properly applied here, none of the *Aspirus* factors justifies a Board mail-ballot election. That includes *Aspirus*’s consideration of whether COVID-19 cases in the county or region have “increased” over the past 14 days, or whether there is an “outbreak.” Amazon’s proposed manual election protocols render statistics outside the facility essentially *irrelevant* because there is no marginal, increased risk of virus exposure within the manual election zone with the overlapping protections premised on social distancing, masks, disinfectants, airflow, outdoor location, and other measures.<sup>2</sup> The testimony of the Union’s medical expert therefore misses the mark, for it centers on inapplicable Jefferson County and Alabama statistics and concedes, tellingly, that Amazon’s protocols would “help to reduce transmission” and mitigate even those statistics. And under any reasonable definition, there is no “outbreak.” Confirmed infections across a total BHM1 population of approximately 7,575 individuals<sup>3</sup> (employees and contingent workers) over a 14-day period are

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<sup>1</sup> See Supplemental Certification of Mike Stone, executed on January 7, 2021 (“Supp. Stone Cert.”) (stating that there are 6,190 associates currently employed in job classifications included in the bargaining unit). The Supplemental Certification is attached as Attachment 1.

<sup>2</sup> The Union’s expert witness noted that the medical community had not seen an increase in coronavirus cases due to early voting—a “positive indicator, at least, that we’re doing things the right way in terms of the lines for voting,” she noted in an interview. See Donna Cope, *Vote Safely, Stay Healthy for the Holidays With COVID-19 Tips from UAB*, Alabama NewsCenter (Nov. 2, 2020), <https://alabamane.wscenter.com/2020/11/02/vote-safely-stay-healthy-for-the-holidays-with-covid-19-tips-from-uab>.

<sup>3</sup> See Supp. Stone Cert. ¶ 2.

minimal under the relevant standards. The Regional Director must measure Amazon's election plan against Amazon's backdrop of preparation, training, and successful risk management globally during the pandemic. Amazon has been living a continuously improving COVID infection prevention plan for nearly a year, and the Regional Director should take that into account when assessing what Amazon's safety protocols can and will do.

Even if the Regional Director concluded that *Aspirus* opened the door to a Board mail-ballot election, the uncontested efficacy of Amazon's safety protocols and numerous disadvantages of a Board mail-ballot election justify a manual election in accord with the Board's policy and precedent:

- 1. A manual Board election process is far more likely to result in a prompt resolution of this election as compared to a Board mail-ballot election that will impose a time-consuming and significant administrative burden on the Region.** Public policy and the interests of all parties favor a prompt resolution of NLRB representation matters. The herculean administrative and logistical effort to administer a Board mail-ballot election likely will take at least *several months*, as compared to the *one week* it will take to complete a manual election for nearly 6,200 employees. Timing alone is a significant factor weighing in favor of a manual election here.
- 2. A mail-ballot election in a unit of this size is much more likely to trigger ballot disputes, objections, and post-election challenges—further undermining the public policy favoring prompt resolution of representation matters.** Simply put, mail ballots raise a host of administrative and legal problems that do not exist with manual elections. While the Board and its agents work hard to minimize issues, in a bargaining unit of this size a Board mail-ballot election is all but destined to result in more litigation, more delay, and more uncertainty as to the outcome of this representational matter.
- 3. Voter participation levels matter, and history has shown that mail-ballot elections substantially reduce voter participation, even before *Aspirus* recognized and recounted the exact statistics of this phenomenon.** Maximizing voter participation should be a goal that Amazon, the Union, and the Board all share. As the Board's recent mail-ballot data demonstrates, a Board mail-ballot election will depress voter turnout anywhere from 20% to 45% below comparable Board manual election levels and will undermine that goal.

**4. Amazon has implemented robust safety protocols that will protect everyone involved in the election process.** *See* Section II.B.2, below, for more detail.

The Regional Director should look at the specific facts of this case and follow Board precedent recognizing that a manual election would best fulfill the goals of the Act and the maximum enfranchisement of Amazon employee voters. Should the Region nonetheless decide to move forward with a mail-ballot election over Amazon’s objections and the length to which Amazon is willing to go to ensure maximum safe conditions, Amazon proposes necessary amendments to mail-ballot procedures to mitigate the negative impacts or potential harm—including election-related litigation over ballot fraud or other election interference claims.<sup>4</sup>

## **II. FACTUAL BACKGROUND**

### **A. The Union’s Petition.**

The Union filed a petition for election on November 20, 2020, seeking to represent a unit of hourly associates employed at Amazon’s BHM1 Fulfillment Center in Bessemer, Alabama (“Petition”). (B. Ex. 1(a)).<sup>5</sup> The Petition originally sought a manual ballot with “24/7” polling over several days. *Id.*

On November 24, 2020, Amazon requested a check of the Union’s showing of interest, based on the Union’s representation that the petitioned-for unit of “fulfillment center employees” consisted of 1,500 associates. Over the next two weeks, Amazon provided information to the Region—including thousands of pages of payroll records—showing that the true number of

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<sup>4</sup> These concerns are real. As the Region knows, Amazon raised serious concerns regarding the legitimacy of the electronic authorization cards allegedly obtained by the Union at the showing of interest phase of this election process. Those concerns grow exponentially in an unregulated mail-ballot election where it will be impossible to police the conduct of remote efforts to secure votes, let alone in the laboratory conditions that the Board has long required in the context of a union election. *See Gen. Shoe Corp.*, 77 NLRB 124 (1948).

<sup>5</sup> References to the Hearing Transcript are in the form of “Tr. \_\_,” references to the Board Exhibits are in the form of “B. Ex. \_\_,” and references to the Employer’s Exhibits are in the form of “E. Ex. \_\_.” Certifications submitted in support of the Employer’s December 28, 2020 Offer of Proof or today will be abbreviated as “Cert.”

associates in the petitioned-for unit was *much* greater—between 5,500 and 5,800 at that time. On December 10, 2020, however, the Region informed Amazon that the Region was “administratively satisfied” with the Union’s showing of interest and, on December 15, 2020, advised Amazon that the Union had met the 30% showing of interest requirement based on a unit consisting of 5,591 employees. This all was in spite of the fact that, even if the Union had obtained authorization cards from every one of the 1,500 associates that the Union represented in the Petition, that would not have met the 30% showing. The Region has never explained to Amazon how this could be or whether it permitted the Union to supplement with post-petition cards.

In their statements of position, the Union and Amazon agreed that regular full-time and part-time Fulfillment Associates were properly in the unit, but disagreed on nearly everything else. *Compare* Amazon Statement of Position (Dec. 11, 2020) (B. Ex. 3(a)), *with* Union Responsive Statement of Position (Dec. 15, 2020) (B. Ex. 3(b)). Approximately 951 employees and over 20 job classifications remained in dispute. (B. Exs. 3(a), 3(b)). The Union also flipped to advocating a mail-ballot election. (B. Ex. 3(b)).

On December 18, 2020, Hearing Officer Kerstin Meyers from Region 10 opened what became a three-day pre-election hearing. Amazon began presenting its evidence. At the opening of the second day, Petitioner changed its position on the unit composition, which caused most of the day to be spent on stipulation negotiations. (Tr. 178–79). No evidence came in that day. By the evening of the second day, the Union had agreed with every single one of Amazon’s positions on job classifications to be included in the unit. In other words, Amazon had prevailed in all of those twenty-plus disputes. However, the Union, contrary to its initial filing requesting a manual election, at day two of the hearing still disagreed with conducting a manual election.

On the third day, the parties formally stipulated to the unit’s employee job classifications, as well as to Amazon’s representation of the approximate number of employees in each job classification as of December 15, 2020—a total of 5,968 employees on that date. (B. Ex. 2; Tr. 185–86).

The remaining legal issue was whether the Region should conduct the election manually or by mail ballot. The Hearing Officer refused to allow Amazon to put on any evidence on this issue, or any further evidence in relation to plant operations in general.<sup>6</sup> Shortly before the hearing opened on December 22, the Hearing Officer directed Amazon to make a written offer of proof. The Hearing Officer denied Amazon’s request to present witness testimony on remaining issues but allowed Amazon to use the Christmas holiday weekend to present a perfected offer of proof and position on the mail-ballot issue. (Tr. 189). Amazon submitted its perfected offer of proof (“Offer of Proof”) on December 28, 2020, which included a detailed summary of Amazon’s proposed protocols for conducting a safe and efficient manual election vote at the location nearest and most convenient to its affected employees, as well as supporting certifications from:

- (b) (6), (b) (7)(C), (b) (7)(A), Amazon’s (b) (6), (b) (7)(C), (b) (7)(A) at BHM1;
- Mike Stone, the Director of WHS for Amazon’s Global Customer Fulfillment network;
- Dr. Vin Gupta, Amazon Principal Scientist, a renowned pulmonary and critical care medicine physician with a “background in public health . . . focused on

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<sup>6</sup> While Amazon was unable to litigate this issue at the hearing, Regional Directors have considered evidence regarding manual elections presented in post-hearing briefs, and the Regional Director should do the same. *See Pak Norwich Mgmt. Inc.*, Case 03-RC-268722 (Dec. 11, 2020), *M.C. Dean, Inc.*, Case 05-RC-267942 (Dec. 9, 2020), *Michael Stapleton Assoc. LTD.*, Case 29-RM-266140 (Nov. 24, 2020) (in each, considering post-hearing briefs from parties in determining whether to hold a manual or mail-ballot election).

epidemic preparedness” serving with various national and international bodies, Gupta Cert. ¶ 10, who has treated and advised on COVID-19 from the time it first arrived in the United States via Washington State; and

- Dr. W. Ian Lipkin, the John Snow Professor of Epidemiology, Professor of Neurology and Pathology and Cell Biology, and Director of the Center for Infection and Immunity at Columbia University.<sup>7</sup>

**B. Overview of Amazon’s BHM1 Fulfillment Center.**

1. BHM1’s Operations.

BHM1 is an Amazon Robotics Sortable Fulfillment Center. (Tr. 33). Employees at BHM1 receive, pick, pack, and ship “sortable” packages, i.e., packages that generally do not exceed 25 pounds. (Tr. 33–34).

This four-floor site has 855,000 square feet, or approximately 14 football fields, of space on its first floor alone, and includes over ten miles of conveyer belts (also referred to as “conveyance”), and over 409 associate workstations. (Tr. 38–39, 54). As of January 7, 2021, BHM1 employed nearly 6,200 hourly associates, who report to work for a number of shifts. *See* Supp. Stone Cert. ¶ 2. Those shifts are typically ten hours long and are grouped so that there are two periods during each workday where one set of shifts ends and the next set begins. (B Ex. 3(a), Attachment 1). BHM1 performs its highly coordinated processes using barriers, social distancing, and the other health and safety protocols described below. (*See, e.g.*, E. Exs. 1–10; E. Ex. 11;<sup>8</sup> Tr. 159–167).

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<sup>7</sup> As discussed below, Amazon moves the Hearing Officer to reconsider and allow all these certifications in as evidence. *See* Section III.A.3.

<sup>8</sup> <https://www.aboutamazon.com/news/operations/join-our-team-on-a-guided-video-tour-through-a-fulfillment-center>.

## 2. Overview of Amazon's COVID-19 Health and Safety Measures.

During the pandemic, Amazon's obligation to process and distribute customer orders for essential and other goods has continued unabated, even without the ability of BHM1 to "go remote." Amazon has adopted robust protocols and systems to minimize or eliminate the risk of COVID-19 infection at its facilities. More specifically, Amazon has implemented industry-leading health and safety measures to protect its associates as they provide essential services to the country, with the ability, for example, to be tested on-site for free, as part of protection for both Amazon sites and the broader community. See (b) (6), (b) (7)(C) Cert. ¶ 2; *see also* How We're Taking Care of Employees During COVID-19, Amazon (last visited Jan. 2, 2021), <https://www.aboutamazon.com/news/company-news/how-were-taking-care-of-employees-during-covid-19>. As explained in more detail below, these health and safety measures include, but are not limited to, (a) enhanced cleaning and sanitization; (b) daily temperature checks of all associates through contactless thermal temperature screening; (c) provision of protective supplies (including medical masks); (d) frequent hand washing and installation of hand-sanitizing stations; (e) significant structural and operational changes (including protective barriers and staggered shifts); (f) quarantining and contact tracing procedures; (g) regular communications to employees about health and safety policies; and (h) support of two-way feedback between Amazon and its employees on its health and safety measures. BHM1 has been at the forefront of these health and safety efforts domestically. (b) (6), (b) (7)(C) Cert. ¶ 2.

### a. *Enhanced Cleaning and Sanitization Measures at BHM1.*

In response to the pandemic, Amazon began increased cleaning at all facilities, including BHM1, when BHM1 launched in March 2020. *Id.* ¶ 7. These increased cleaning measures

included regular sanitization of all door handles, handrails, lockers, and other “high touch” surfaces. *Id.*

The enhanced cleaning protocols added almost 200 additional points of contact that cleaning teams now regularly sanitize and increased the frequency of cleanings per each ten-hour shift. *Id.* ¶ 8. For example, while under standard protocol, Amazon’s cleaning teams cleaned the facility two times per shift, cleaning teams are now doing so eight times per shift under the enhanced cleaning protocol. *Id.*

Amazon has significantly increased the size of its cleaning team at BHM1 in order to implement these enhanced cleaning protocols as the pandemic has progressed. *Id.* ¶ 9. Further, BHM1 follows Amazon’s procedures with respect to janitorial audits. *Id.* ¶ 10; Stone Cert. ¶ 21. Amazon’s WHS team at BHM1 has conducted a minimum of one janitorial audit per shift since the building’s launch on March 23, 2020. (b) (6), (b) (7)(C) Cert. ¶ 10.

In consultation with experts, Amazon has adopted disinfectant spraying, which is a deep-cleaning practice commonly used by hospitals and airlines. *Id.* ¶ 11. This disinfectant spraying process effectively coats the entire surface of the treated area with disinfectant, including around any curves or bends in handles, and disinfects difficult-to-clean surfaces around the facility. *Id.*

Amazon conducts daily disinfectant spraying throughout BHM1. *Id.* ¶ 12. An Amazon-approved third-party vendor applies the disinfectant spray to sanitize all areas of the facility (including stairways, breakrooms, and all associate workstations) and equipment (including totes, pallet jacks, and carts) every 24 hours. *Id.*

In addition, Amazon’s cleaning teams cleanse associates’ workstations between shifts and during breaks. *Id.* ¶ 13. The cleaning teams empty the trash at each workstation and dust and wipe clean the surfaces at the workstation. *Id.* Amazon also instructs all associates to clean



and disinfect their workstations and tools at the beginning and end of shifts as well as on an ongoing basis, and provides them with appropriate cleaning supplies to do so. *Id.* ¶ 14.

Amazon has installed over 100 “Sanitation Stations” that contain additional cleaning supplies, such as disinfecting wipes and bottles of disinfectant spray, throughout BHM1. *Id.* ¶ 15. The Sanitation Stations vary in size. *Id.* Smaller Sanitation Stations include, for example, containers of cleaning supplies attached to individual workstations. *Id.* Larger Sanitation Stations take the form of six-foot tables stocked with cleaning supplies (including heavy-duty sanitizing wipes, bottles of disinfectant spray, and paper towels) for all associates to take. *Id.* Amazon has strategically located these larger Sanitation Stations in central areas of BHM1 to ensure that associates can easily and quickly access the cleaning supplies they need while they are working, and associates are allowed to take as many disinfecting wipes and cleaning supplies as they need. *Id.* In addition, BHM1 has supplied 12 portable handwashing stations to supplement the 110 wash stations available in the restrooms. *Id.*, Ex. 1.

Amazon’s procurement team conducts two “Sanitation Supply” audits per each ten-hour shift to confirm that there are sufficient sanitation and cleaning supplies throughout the facility. *Id.* ¶ 16. Amazon’s procurement team also does a daily count of the number of disinfecting wipes and other cleaning supplies at BHM1. *Id.*

Amazon regularly conducts its own in-house COVID-19 testing through its “Project UV” at BHM1, which is a unique companywide initiative in that Amazon has built and maintained its own testing lab system. *See id.* ¶¶ 76–77. Amazon encourages associates, including those who are asymptomatic, to get tested at least every two weeks, for free, by the on-site clinician. *Id.* ¶ 76. Many associates take advantage of this free on-site testing and receive results within a few days of a test. *Id.*

As of December 28, 2020, to Amazon’s then-current knowledge, 40 individuals were tested positive by Project UV and thus fall into the Board’s GC 20-10 category of “individuals present in the facility within the preceding 14 days [who] have tested positive for COVID-19 (or are awaiting test results, are exhibiting characteristic symptoms, or have had contact with anyone who has tested positive in the previous 14 days).” *Id.* ¶ 77. An update of this figure is presented in Section II.A.2.a, below.

Upon confirmation that an associate at BHM1 was actually or presumptively diagnosed with COVID-19, Amazon determines whether additional deep cleaning (beyond the now-standard enhanced cleaning protocols) is necessary. *Id.* ¶ 17. In making this determination, Amazon identifies where the diagnosed associate was in the building, for how long, how much time has passed since the associate was on-site, and with whom the associate interacted, among other factors. *Id.* ¶ 18. If the associate informs Amazon of the diagnosis while on-site, the site shuts down the associate’s workstation and any adjacent work areas for a deep cleaning. *Id.* The cleaning team performing this deep cleaning wears additional personal protective equipment (“PPE”). *Id.*

b. *Amazon Conducts Daily Temperature Checks of All Associates at BHM1.*

Amazon conducts daily on-site temperature checks at BHM1 to verify that associates do not have an elevated temperature when they arrive at the facility. *Id.* ¶ 19. Amazon uses contactless thermal cameras, and hand-held thermometers as a secondary screen, to check the temperature of all persons entering BHM1. *Id.*; *see also id.*, Ex. 2

BHM1 follows Amazon’s policies and procedures with respect to temperature checks. *Id.* ¶ 20; Stone Cert. ¶ 30. Amazon has posted signs at the entrance of BHM1 explaining that

temperature screening is required for anyone entering the building and that anyone who has an elevated temperature must return home. (b) (6), (b) (7)(C) Cert. ¶ 21, Ex. 3.

The temperature check program supplements Amazon's other measures encouraging associates to stay home if they are feeling sick. *Id.* ¶ 22. For example, Amazon has posted signs near the employee badge scanners at the entrance of BHM1 directing associates to not enter the facility and to go home if they are experiencing upper respiratory or flu-like symptoms, including fever, cough, and shortness of breath. *Id.* Further, Amazon provides sick pay for associates diagnosed with COVID-19. *Id.* ¶ 46; Stone Cert. ¶ 60.

c. *Amazon Provides Associates with Protective Supplies Necessary and Appropriate to Perform Their Work Safely.*

Amazon began daily distribution of face masks to all associates at BHM1 in April 2020, and has maintained a constant and abundant supply of face masks on-site at BHM1 since that time. (b) (6), (b) (7)(C) Cert. ¶¶ 23–24. Amazon continues to make face masks available to all associates daily and currently distributes medical masks (which include instructions for use) to associates daily as needed. *Id.* ¶ 25.

Since April 15, 2020, Amazon has required anyone entering BHM1 to wear a face mask or face covering at all times. *Id.* ¶ 26. Amazon has posted signs throughout BHM1 reminding associates that approved face coverings are required. *Id.* At BHM1, face masks or face coverings are required to be worn even when social distancing can, and is, being maintained. *Id.* ¶ 27. These requirements are more restrictive than those imposed by the State of Alabama.<sup>9</sup>

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<sup>9</sup> See <https://www.alabamapublichealth.gov/covid19/assets/cov-sah-mask-faq.pdf> (masks required when a person is “within six feet of a person from another household in any of the following places: (a) an indoor space open to the public; (b) a vehicle operated by a transportation service; and (c) an outdoor public space where ten or more people are gathered”).

BHM1 follows Amazon's policies with regard to protective supplies and provides additional appropriate supplies depending on an associate's role and task. *Id.* ¶ 28; Stone Cert. ¶ 39.

d. *Amazon Instructs Associates to Wash Their Hands Frequently and Has Installed Hand-Sanitizing Stations Throughout BHM1.*

Amazon instructs all associates at BHM1 to wash their hands frequently. (b) (6), (b) (7)(C) Cert. ¶ 29. Signs are posted throughout BHM1 encouraging all associates to wash their hands with soap and water for at least twenty seconds. *Id.*

As of March 22, 2020, Amazon extended regular break times from 15 minutes to 20 minutes in order to ensure that associates have sufficient time to wash their hands and to clean their workstations; associates have two regular breaks per shift in addition to a 30-minute lunch break. *Id.* ¶ 30. Additionally, at any time, an associate can take additional time off to go wash their hands or sanitize their workstations. *Id.*

There are 34 bathrooms at BHM1, and Amazon has installed over 35 hand-sanitizing stations along with 12 portable handwashing stations throughout BHM1 to ensure that associates can wash their hands whenever they want. *Id.* ¶ 31, Ex. 1. The dispersed locations of the bathrooms and hand-sanitizing stations ensure that associates are able to regularly wash their hands during their shifts. *Id.* ¶ 32.

e. *Amazon Has Configured BHM1 to Allow for Appropriate Social Distancing and Other Sanitary Protections.*

BHM1 was included in Amazon's adoption and implementation from the very start of its operations. Stone Cert. ¶ 19. One reason this occurred is that BHM1 opened in March 2020 during the spring wave of COVID-19 in the United States, and thus was opened as a "model COVID site." *See id.* As a model site, BHM1 generally received and adopted all new Amazon anti-COVID protocols as soon as Amazon was able to create them. *Id.* Thus, Amazon has made

significant structural and operational changes at BHM1 in order to facilitate social distancing between and among the associates to help prevent the spread of COVID-19. (b) (6), (b) (7)(C) Cert. ¶ 35. For example, BHM1 has added protective barriers consistent with CDC guidance to separate workstations that do not meet social distancing guidelines; added eight satellite breakrooms in addition to the permanent break areas; removed breakroom furniture to ensure that all seats are six feet apart along with separating microwaves to meet social distancing guidelines; relocated chairs and tables so no more than two people could sit at any single six-foot breakroom table; developed technology for associates to clock in and out via the “AtoZ” mobile application on their phones in order to prevent potential queuing at time clocks; and converted certain areas of BHM1 into one-way walking paths to reduce crowding, among other measures. *Id.* ¶ 36, Ex. 4.

In addition, Amazon has taken steps to reduce the number of touchpoints for associates in BHM1. *Id.* ¶ 37. For example, Amazon uses doorstops to keep doors inside BHM1 open so that associates do not have to touch the door handles to open and close the doors. *Id.*

Amazon significantly modified daily operations for BHM1’s thousands of associates in order to maintain appropriate social distancing. *Id.* ¶ 38. For example, to ensure social distancing, Amazon has staggered the start times of associates’ shifts by 15-minute intervals in order to reduce the number of associates entering and exiting the facility at the same time. *Id.* ¶ 39. Likewise, Amazon staggered break times in order to ensure appropriate social distancing in breakrooms and other areas. *Id.*

Amazon has limited onboarding of new associates to 50 associates at a time, conducts trainings using Kindles and other virtual means, and indefinitely cancelled all large events, gatherings, and trainings at BHM1. *Id.* ¶ 40. Amazon also has closed BHM1 to the public. *Id.*

Before the COVID-19 health crisis, supervisors typically held daily stand-up meetings with associates to address safety tips, success stories, and other information. *Id.* ¶ 41. Amazon has now nearly eliminated all in-person stand-up meetings and replaced these meetings with other new and pandemic-inspired methods of communication, such as mobile applications and broadcasts to associate workstations; new mobile HR pods on the floor fitted with plexiglass and voice enhancers to account for mask wearing and allow for confidential discussions; and more to ensure safety while also maintaining a close connection between employees and their managers.

Amazon has designated eleven associates per shift along with dedicated leadership at BHM1—known as the social-distancing team—to promote social distancing and act as coaches throughout the facility. *Id.* ¶ 43.

Further, Amazon has developed tools that use augmented reality technology to display associates’ relative distance to one another. *Id.* ¶ 44. This technology, called “Distance Assistant,” uses a TV screen with a mounted camera to show and alert associates when they are not meeting social-distancing requirements so that they can distance themselves. *Id.* Amazon has deployed seven of the Distance Assistants to the most high-traffic areas in BHM1 to bolster other controls that it has in place. *Id.*, Ex 5.

f. *To Protect the Health of Its Associates, Amazon Imposes a Quarantine Procedure and Conducts Contact Tracing Following a Positive COVID-19 Diagnosis.*

Amazon instructs all associates feeling sick to stay home, self-monitor, seek assistance from a medical care provider, and report any symptoms or diagnosis to appropriate leadership. *Id.* ¶ 45, Ex. 6. BHM1 follows Amazon’s policies with respect to paid time off for associates diagnosed with COVID-19 and the criteria for determining when a diagnosed associate can return to work. *Id.* ¶ 46; Stone Cert. ¶ 60.

Further, Amazon notifies all associates at BHM1 about confirmed positive diagnoses of individuals who work at BHM1. (b) (6), (b) (7)(C). Cert. ¶ 47; Stone Cert. ¶ 60.

BHM1 follows Amazon's policies and procedures with respect to conducting "contact tracing" and placing individuals identified through contact tracing on paid quarantine leave.

(b) (6), (b) (7)(C). Cert. ¶ 48; Stone Cert. ¶¶ 62–63. Amazon conducts this contract tracing to identify associates who were in close contact with the diagnosed associate on site and supplements its tracing in some cases by review of closed-circuit television monitoring video at BHM1. (b) (6), (b) (7)(C). Cert. ¶ 48, Ex. 5. In addition, Amazon proactively reaches out to local health authorities with updates, including to advise local health authorities of confirmed COVID-19 cases at BHM1. *Id.* ¶ 49.

g. *Amazon Regularly Communicates Its Health and Safety Policies to Employees.*

Amazon communicates new policies and process changes implemented in response to COVID-19 to BHM1's associates through a variety of means, including text message updates, emails, posters, bulletin boards, and scrolling messages on TVs throughout the facility. *Id.* ¶ 4. Amazon's WHS team at BHM1 also has conducted thousands of one-on-one engagements with associates about Amazon's health and safety policies, such as reminding associates of Amazon's policy requiring all associates to wear face masks or face coverings and encouraging associates to clock in and out via Amazon's "AtoZ" mobile application in order to minimize crowding at time clocks. *Id.* ¶ 5.

In addition, since mid-April, BHM1's (b) (6), (b) (7)(C), (b) (7)(A) has sent to all BHM1 associates a weekly email, called (b) (6), (b) (7)(C), (b) (7)(A) which provides updates about the site's health and safety efforts. *Id.* ¶ 6. Each weekly (b) (6), (b) (7)(C), (b) (7)(A) email describes specific safety actions that BHM1 has

taken in the past week, provides COVID-19 safety tips and reminders, and shares success stories of associates and managers from the previous week. *Id.*

### **C. Overview of Proposed Manual Election Details<sup>10</sup>**

Pursuant to a request by the Hearing Officer, Amazon filed a detailed summary of its proposed election protocols, which addresses all issues and protocols required of Amazon by the Hearing Officer, GC Memo 20-10, *Aspirus*, and GC Memo 21-01. The Offer of Proof is attached as Attachment 2. Rather than repeating the entire highly detailed Offer of Proof here, Amazon provides the following high-level summary of just a few of those protocols covered in its Offer of Proof, including the certifications of medical experts, with respect to an efficient and safe manual election in this case:

- A single voting location—the outside parking lot adjacent to BHM1.
- Two (2) voting periods per day—6:00 a.m. to 11:00 a.m.; break from 11:00 a.m. to 12:30 p.m.; and then open polls again from 1:00 p.m. to 6:00 p.m.
- Voting over a period of up to four days depending on how many Board agents are available to participate.
- Eligible voters could vote before or after their respective shifts, and Amazon additionally consents to self-release by associates to vote.
- Voting would take place in a tent covering approximately 3,600-square-feet with the ability to increase, or decrease, the size of the area to fit the Region’s requirements.
- The tent would contain heating and lighting, and have the ability to raise and lower the sides of the tent to increase the flow of fresh air throughout the area.

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<sup>10</sup> Amazon recognizes that, under *Aspirus*, Regional Directors must “be careful not to approve manual election arrangements . . . that would create the impression that any party controls employee access to the Board’s election processes . . .” 370 NLRB No. 45, slip op. at 7. Amazon fully appreciates this principle, and Amazon’s proposed protocols are not intended to suggest otherwise. All manual election details presented here assume that the Board will supply and utilize enough Board banner, signage, insignia, etc. to ensure all attendees will understand that this is a Board election and not an Amazon event. Amazon remains open to any amendments or additions to the proposed protocols that the Board deems necessary.



- Amazon would provide all health certifications, including, but not limited to, those included in GC 20-10, *Aspirus*, and GC 21-01, requested by the Region prior to and after the election.
- Amazon would make its free COVID testing available to Board agents and union observers. In addition, Amazon would make its free rapid COVID testing available to all employees, Board agents, and union observers on the day of the election.
- Amazon would provide necessary PPE such as gloves, eye protection, face masks, and hand sanitizer to all Board agents and observers.
- Employees would be provided with fresh gloves and masks prior to entering the voting area.
- Amazon would conduct temperature screening utilizing thermoscan technology.
- Each voter would be provided a disposable pencil to use for the vote.
- Hand sanitizer would be available throughout the voting line and tent.
- Amazon would place signs throughout the election area, and place marks on the ground delineating six feet of distance. Amazon also proposes that it can make its “Distance Assistant” social-distance tracking system available for use in the line leading to the voting tent.
- Finally, Amazon proposes a number of safeguards specifically for the observers and Board agents such as plexiglass shields around their areas; the use of individualized voter lists; walkie-talkies for ease of communication; designated tables, chairs and pencils; and pass-through boxes for the passing of materials to voters.

### III. **ARGUMENT**

#### A. **The Regional Director Should Direct a Manual Election Under *Aspirus* to Resolve Promptly and Effectively the Question Concerning Representation at the BHM1 Fulfillment Center.**

1. *Aspirus* Reinforces the Presumption of Manual Elections, While Specifying Certain Conditions That May Allow a Mail-Ballot Election Based on the COVID-19 Pandemic.

The Board’s purpose in *Aspirus* was “to set forth the guidelines and parameters applicable to determining the propriety of a mail-ballot election under the current [pandemic] circumstances.” *Aspirus*, 370 NLRB No. 45, slip op. at 1. The Board did not purport to mandate

mail-ballot elections. On the contrary, the full Board began by highlighting that a manual ballot is the normal, default, and preferred voting procedure under the Act. It reaffirmed and repeatedly emphasized the Act’s “strong” historical preference for manual elections:

While the Covid-19 pandemic indisputably warrants mail-ballot elections in appropriate circumstances, *the Board’s existing precedent strongly favors manual elections*. Manual elections permit in-person supervision of the election, promote employee participation, and serve as a tangible expression of the statutory right of employees to select representatives of their own choosing for the purpose of collective bargaining, or to refrain from doing so. *These reasons remain valid today and continue to support the Board’s longstanding preference for manual elections*.

*Id.* (emphases added); *see also id.* at 2 (stating that “the applicable presumption favors a manual, not mail-ballot, election” (citing *Nouveau Elevator Indus., Inc.*, 326 NLRB 470, 471 (1998))); *id.* (“Given the value of having a Board agent present at the election—a circumstance which is not possible in mail-ballot elections—the Board’s longstanding policy is that representation elections should, as a general rule, be conducted manually . . . .”); *id.* at 1 (noting that, although Regional Directors have discretion, such “discretion must be exercised within the guidelines and parameters established by the Board, which include its preference for manual elections”); *id.* at 2 n.6 (noting that “generally lower voter turnout in mail-ballot elections supports the Board’s historic preference for manual elections”); *id.* at 4 (noting “longstanding preference for manual elections”).<sup>11</sup>

While acknowledging that Regional Directors possess discretion in making the manual versus mail-ballot determination, the Board did not hold that the existence of a pandemic automatically justifies overriding the presumption favoring manual elections conducted by Board

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<sup>11</sup> Member McFerran agreed with the other three Board Members who authored the opinion in *Aspirus* that Board precedent established a “traditional preference” for manual elections. 370 NLRB No. 45, slip op. at 9 (McFerran, concurring) (“[In *San Diego Gas & Electric*, t]he Board reiterated its traditional preference for manual elections . . . .”).

agents. Instead, the Board instructed “Regional Directors [that they] should take into consideration the following situations,” and one or more must be present before the Regional Director even can *consider* mandating a mail ballot due to pandemic conditions:

1. The Agency office tasked with conducting the election is operating under “mandatory telework” status;
2. Either the 14-day trend in the number of new confirmed cases of Covid-19 in the county where the facility is located is increasing, or the 14-day testing positivity rate in the county where the facility is located is 5% or higher;
3. The proposed manual election site cannot be established in a way that avoids violating mandatory state or local health orders relating to maximum gathering size;
4. The employer fails or refuses to commit to abide by the GC Memo 20-10 protocols;
5. There is a current Covid-19 outbreak at the facility or the employer refuses to disclose and certify its current status; and
6. Other similarly compelling considerations.

*Id.* at 4–7. None of the above factors exists in this case, as detailed below, much less to any degree suggesting that mail ballots are the preferred course.

2. None of the *Aspirus* Factors Supports a Mail-Ballot Election in This Case.

The *Aspirus* factors do not authorize a departure here from the Board’s strong preference for manual elections. It is beyond dispute that three of the five *Aspirus* “situations” are absent: (Situation 1) as of the date of this filing, there is no mandatory telework order covering all or part of Region 10; (Situation 3) there are no state or local orders in Alabama that would apply to BHM1 to prevent the plan of conducting an election outside in an open-air tent, with entry, voting, and exit controlled by proper six-foot social distancing procedures as presented by Amazon’s proposal and proffer in this case; and (Situation 4) Amazon has unequivocally agreed in its proposal and Offer of Proof to the GC Memo 20-10 protocols, which are easy to implement

because BHM1 already operates in near equivalent conditions. *See* Offer of Proof, 1–2; [REDACTED] Cert. ¶¶ 54–68; Stone Cert. ¶¶ 19–75.<sup>12</sup>

The only issues that could conceivably require analysis are positivity rates/trends and the possibility of an “outbreak” at BHM1. But neither of those factors exists here and, even if they did, they would not suffice to override the Board’s preference for manual elections.

- a. *Because of the Extraordinary Measures Proposed to Seal Off the Election Process From General Public Contact and the Fact That Amazon Employees Report to Work Already, the Appropriate Geography Is the Election Site Itself.*

While the default positivity rates/trends guideline in *Aspirus* is stated in terms of county-based figures, nothing in *Aspirus* suggests that county-level data is a mandatory metric.<sup>13</sup> On the contrary, the purpose of this measurement is to assess “whether safety needs dictate a mail-ballot election.” *Aspirus*, 370 NLRB No. 45, slip op. at 5. That purpose logically favors the most accurate approach to determining a geography. The county-based standard applies as the “preferred metric” only if there is none better given the particular nature of the election.<sup>14</sup> *Id.* at 7.

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<sup>12</sup> For example, Amazon has made significant structural and operational changes at BHM1 in order to facilitate social distancing. *Compare* [REDACTED] Cert. ¶ 35, with GC Memo 20–10 at 3 (requiring that arrangements be made to accommodate [REDACTED] al distancing).

<sup>13</sup> *Aspirus* simply stated this guideline in terms of what would “normally be appropriate”: “Thus, a mail-ballot election will normally be appropriate if either (a) the 14-day trend in the number of new confirmed Covid-19 cases in the county where the facility is located is increasing, or (b) the 14-day testing positivity rate in the county where the facility is located is 5 percent or higher.” 370 NLRB No. 45, slip op. at 5. As demonstrated, this election is not the norm.

<sup>14</sup> We understand that, per *Aspirus*, the Regional Director is likely to consider—as part of her decision-making process—county-level data for the Birmingham, Alabama area (Jefferson County). That data shows that the most recent 14-day trend in the number of new confirmed cases in Jefferson County is apparently decreasing, and the positivity rate in Jefferson County over the last 14 days is 21% (based on 8,633 cases out of 40,374 tested in Jefferson County). *See* Alabama’s COVID-19 Data and Surveillance Dashboard, Alabama Dep’t of Public Health, <https://alpublichealth.maps.arcgis.com/apps/opsdashboard/index.html#/6d2771faa9da4a2786a509d82c8cf0f7> (last visited Jan. 7, 2021). Even assuming that one or both data points, standing alone, would allow the Regional Director to direct a mail-ballot election under *Aspirus*, Amazon respectfully submits—as described in detail in this brief—that there are more targeted and effective “intracounty” data to consider

Indeed, *Aspirus* itself confirms that the real standard here is the “more applicable” and “best available geographic statistical measure”:

Regarding both of the above measures, we recognize there may be some instances where the use of either broader regional data or *narrower intracounty data* is more relevant to a particular case. For example, if some or all of the work force comes from areas outside the county, it may be appropriate to consider data from those other areas; conversely, where the county covers a large geographic area or has widely varying Covid-19 rates, city-level or *other intracounty data* may be more relevant than countywide data. Although we have identified county-level data as our preferred metric, *we do not mandate that Regional Directors use any particular geographic level of data where better, more applicable, data exists*, and we encourage the Regional Directors to cite with explanation *the best available geographic statistical measure* in making their determinations.

*Id.* at 6 (emphases added). Intracounty data is allowed, and data should be as localized as possible to the place of election itself. *See id.* at 5 (“For example, given the significant variations in the prevalence of Covid-19 from locality to locality, *broad trends* like statewide statistics *may be of questionable use in assessing the safety of conducting a manual election at a specific facility, at least when more localized data is available.*” (emphasis added)). Notably, even before the Board issued the *Aspirus* opinion, the Board had granted review where a Regional Director was alleged to have used an overbroad geographical standard for infection rates. *JDRC Managed Servs.*, Case 25-RC-265109, Board Order Granting Review (Oct. 13, 2020) (not reported in Board volumes) *in response to* Employer’s “Emergency Motion To Stay Mail Ballot Election” (Oct. 6, 2020).<sup>15</sup>

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associated with the Amazon facility. The failure to consider that data over the broader county-level data under these circumstances would constitute an abuse of discretion.

<sup>15</sup> The *JDRC* case went back to the Regional Director on November 5, 2020 after the Regional Director sua sponte requested remand from the Board so she could reconsider. The parties apparently entered into Stipulated Elections Agreements on November 19 and December 31, 2020. *See* Docket for *JDRC Managed Services*, Case 25-RC-265109 (last visited Jan. 7, 2021).

***Here, a better measure than the county would be the Amazon BHM1 facility itself.***

That conclusion flows from the facility’s massive size and on-site (i.e., not remote) workforce—comparable in some cases to the population of three entire cities, *see* Ala. Code § 11-40-6 (defining “cities” as “[m]unicipal corporations . . . containing 2,000 or more inhabitants”)—as well as its extraordinary infection controls. Here, Amazon is proposing additional extraordinary measures for the election, validated in many similar contexts, that would isolate the Board agents and observers from COVID-19 exposure, including:

- Physically isolated Board agent travel options with deep cleaning;
- Board agent hoteling options with deep cleaning;
- Testing available on or even before election day;
- Temperature-check screening prior to voting;
- Outdoor tents with removable sides and additional fans or HEPA filters for air flow with at least 12 air exchanges per hour;
- Deep cleaning for voting area before vote and in between voting phases;
- Ballot distribution areas, protected by plexiglass, for Board agents to keep Board agents out of contact from voters;
- Pass-through box distribution or screened/tong distribution to keep Board agents out of contact from voters;
- Face shields for Board agents;
- Spacious voting areas;
- Areas for observers protected by plexiglass;
- Visually cued social distancing in voting lines through the “Distance Assistant” technology;
- Extensive markers, stanchions, and spacing indicators for social distancing;
- Single-direction entrance to exit flow; and

- All the other GC Memo 20-10 protocols not mentioned above.

See Offer of Proof at 2–11 and corresponding cites from (b) (6), (b) (7)(C) Cert. These protocols are *especially important* considering that the Regional Director *need not send a platoon of Board agents to conduct the election*—just three per tent. See Offer of Proof at 8–9. The relatively small Board population—potentially all from Birmingham—that needs to be involved enhances the practicality of Amazon’s protocols.

Whether the Region wants to consider this geographical area a “virus exclusion zone,” a “bubble,” or some other term, Amazon proposes multiple protocols that, when implemented, really make everything on the other side of the plexiglass from the Board agents irrelevant—i.e., the county or state infection data is irrelevant, as a medical expert has noted. See Gupta Cert. ¶ 18 (“This [election] activity is far safer than a normal public activity given these precautions.”). Under this standard, *the relevant positivity rate for this proposed manual election is close to zero*. Unless the Board agents themselves come to the site COVID-19-positive at the beginning of the election process, there should be no material risk of COVID-19 spread to those Board agents. And, as discussed above, Amazon will make its free rapid COVID testing available for all employees, Board agents, and union observers on the day of the election, or even beforehand, if asked. Against this record, the Regional Director must not reject a manual election based solely on hypothetical assumptions of future infections. See *Aspirus*, 370 NLRB No. 45, slip op. at 7 n.35 (stating that “the Regional Director should not rely solely on the hypothetical possibility that an employee might become infected in the period between the direction of election and the election itself”).

The evidence here overwhelmingly confirms that the proposed manual election would be safe. In Amazon’s Offer of Proof, two medical experts in the COVID field state that the risk

inside the election zone would be “minimal,” “negligible,” “minimized,” or “minimized fully.” Gupta Cert. ¶¶ 12, 15, 18; Lipkin Cert. ¶ 9. Neither epidemiology expert has any other suggestions as to what Amazon could possibly do to enhance safety further. *See* Lipkin Cert. ¶ 9.

In fact, even the Union’s own medical expert, Dr. Judd, agrees that Amazon’s protocols “help to reduce transmission” of COVID. Declaration of Suzanne E. Judd (“Judd Decl.”), U. Response Ex. 2 ¶ 4. Even more importantly, she does not contest the testimony of Drs. Gupta and Lipkin that the intra-zone risk is “minimal,” “negligible,” “minimized,” or “minimized fully.” *See* Gupta Cert. ¶¶ 12, 15, 18; Lipkin Cert., ¶ 9. In other words, Dr. Judd herself concedes that Amazon’s protocols will ameliorate the baseline Jefferson County levels of infection, and fails to identify any shortcoming in the protocols. Dr. Gupta’s and Lipkin’s bottom-line risk-mitigation assessments thus stand uncontradicted.

Dr. Judd simply (and irrelevantly) opines regarding what is happening, or going to happen, in “Alabama and specifically in Jefferson County.” Judd Decl. ¶ 4. That is a red herring illuminating the limits of Dr. Judd’s testimony. Amazon did not propose protocols for Jefferson County. Amazon’s protocols instead set up a virus exclusion zone that makes virus spread in Jefferson County effectively irrelevant to the election question. At no point in her testimony does Dr. Judd state that the Amazon protocols would be ineffective or are not being enforced, and she concedes that the statistics for BHM1 are better than Jefferson County’s. *Id.* ¶ 8.

In addition, Dr. Judd’s views about other in-person events undermines the Union’s arguments. She concedes that her own institution, the University of Alabama-Birmingham, which she advises on COVID-19 protocols, will bring back college students (with far fewer precautions than Amazon’s BHM1 election protocols) starting January 19. In addition, Dr. Judd



approved of in-person voting during the general election in November 2020, noting that “[m]ost of the polls are socially distanced, having people six feet apart. You will see a lot of masking hopefully and this should keep people safe”<sup>16</sup> and, further, that “the medical community has not seen an increase in coronavirus cases due to early voting.”<sup>17</sup> She noted that certain safeguards, such as maintaining six feet of distance from others while voting, making sure that individuals wear masks, washing hands, and having sanitizer available, were key to ensuring a safe environment for in-person voting.<sup>18</sup> Amazon is taking all of these steps plus many others.

A consistent application of Dr. Judd’s views would thus support the conclusion that Amazon’s proposed manual election would be safe. Yet Dr. Judd now seems to suggest that BHM1 and most everything else in Jefferson County and the state should just simply be shut down as unsafe because these areas are running at more than 25 cases per 100,000, Judd Decl. ¶ 7, or because hypothetical employees will get the virus in the interim. *Id.* ¶ 9. But those standards, under which no business could be operating, are not the governing standards under *Aspirus*. Again, the Board’s legal presumption favors in-person manual elections and precludes the Regional Director from relying “solely on the hypothetical possibility that an employee might become infected in the period between the direction of election and the election itself.” *Aspirus*, 370 NLRB No. 45, slip op. at 7 n.35.

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<sup>16</sup> Alan Collins, *UAB Concerned About Upcoming COVID-19 Spread*, WBRC (Nov. 2, 2020), <https://www.wbrc.com/2020/11/02/uab-concerned-about-upcoming-covid-spread/>. Dr. Judd’s comments begin at 1:00 of the embedded video.

<sup>17</sup> Donna Cope, *Vote Safety, Stay Healthy for the Holidays With COVID-19 Tips from UAB*, Alabama NewsCenter, *supra*.

<sup>18</sup> *Id.*; Eddie Burkhalter, *UAB Epidemiologist Says Next Two Weeks Critical for COVID-19 in Alabama*, Alabama Political Reporter (Nov. 3, 2020) (“Suzanne Judd, an epidemiologist and professor at UAB’s School of Public Health, told reporters Monday that most polling sites have been set up to keep people six feet apart, and encouraged people to bring along and use hand sanitizer when they vote. ‘You’ll see a lot of masking hopefully, and that should keep voting very safe,’ Judd said.”), <https://www.alreporter.com/2020/11/03/uab-epidemiologist-says-next-two-weeks-critical-for-covid-19-in-alabama>.

For these reasons, the Union has effectively conceded that Amazon’s protocol establishes an appropriate local geography of BHM1 and that the virus transmission rate within the election zone is “negligible.” There is ***no actual dispute among the medical experts***, so the Regional Director’s consideration of *Aspirus* condition number 2 should end here.

If the Regional Director is still intent on looking to broader positivity rates, then the Regional Director should look to the positive case rate for all individuals at BHM1 over a 14-day period. *Aspirus* expressly endorses and adopts the approach of Johns Hopkins University in calculating positivity rates. See 370 NLRB No. 45, at 5–6 nn.22–24. As of today, the preferred positivity rate of the Johns Hopkins University Coronavirus Resource Center is called “Approach 4,” which it also describes as “Cases over All Results” See Differences in Positivity Rates, Johns Hopkins, <https://coronavirus.jhu.edu/testing/differences-in-positivity-rates> (last visited Jan. 7, 2021). As explained by Johns Hopkins, this positivity rate is calculated as follows: “the number of **people who test positive** is divided by either **unique people, encounters, or tests** (depending on availability . . .).” *Id.* Johns Hopkins prefers this “people-centered” testing methodology over all methodologies for several obviously valid empirical and historical reasons:

**The Coronavirus Resource Center’s current approach to calculating positivity throughout our site is Approach 4, for the following reasons:**

1. The lack of federal standards creates significant inconsistencies in how states report testing data. Currently, Approach 4 is the only one that can be used for all 50 states.
2. Our data scientists and epidemiologists believe a people-centered calculation allows users to gauge whether states are casting a wide enough net with their testing to identify infections that may be occurring.
3. By looking at the percentage of people who test positive, we also can see whether there are testing participation, access, or capacity problems that need to be addressed.

It is worth noting that historically, Approach 4 focused more on the number of people tested as opposed to the number of tests given, and is the **only people-centered calculation** for which all states report the necessary data.

*Id.*; see also *id.* (“... we believe it is important to continue to calculate and track each state’s test positivity using Approach 4, which is a people-centered calculation, where possible.”).

The Regional Director should adopt Approach 4 here, especially given the large size of BHM1—equivalent to three Alabama “cities” as defined under Alabama law. See Section III.A.2.a, above. As the Regional Director knows, *Aspirus* condition number 2 looks to positivity rates in a relevant geography, see 370 NLRB No. 45, slip op. at 5 n.23, and, as shown convincingly by the above, BHM1 is the relevant geography.

The Approach 4 “people-centered calculation” of “people who test positive divided by unique people” is calculable at Amazon, too. Amazon can report people who test positive at BHM1. Supp. Stone Cert. ¶¶ 3–4.<sup>19</sup> Amazon shares this testing data with the State of Alabama, and it is included in Alabama’s official positivity rate data. *Id.* ¶ 3. Amazon also can calculate the number of “unique people” present in the BHM1 facility over a 14-day period. See *id.* ¶ 2. This includes all individuals: total Amazon employees and total contractors who were present in the facility. *Id.* Amazon does not keep track of all “encounters” in the facility, nor all “tests”

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<sup>19</sup> Amazon is also providing an updated head count and COVID-19-related data in the Supplemental Stone Certification consistent with the Board’s requirement in *Aspirus* that the employer—in requesting a manual election—“shall certify, by affidavit, as part of its submission regarding election arrangements, how many individuals present in the facility within the preceding 14 days have tested positive for Covid-19 (or are awaiting test results, are exhibiting characteristic symptoms, or have had contact with anyone who has tested positive in the previous 14 days).” *Aspirus*, 370 NLRB No. 45, slip op. at 7. If the Regional Director will not consider this factual material absent it being moved into the record, Amazon so moves because these facts are new, updated facts not in existence at the hearing. See 29 C.F.R. § 102.65(e)(1) (providing that a party may “move after the close of the hearing for reopening of the record,” including for the admission of “newly discovered evidence—evidence which has become available only since the close of the hearing”).

taken by everyone in the facility.<sup>20</sup> *Id.* ¶ 4. Thus, Approach 4 gives the most accurate and determinable positivity rate for the BHM1 site for which data are available, and Approach 4 is based on the same data used by the State of Alabama to record official positive tests. *Id.* ¶¶ 3, 5.

Using Approach 4, the BHM1 positivity rate is 2.88%—i.e., 2.88% of the total number of individuals at BHM1, cumulative over the last 14 days from when this data was measured (from today), falls into the category of “how many individuals present in the facility within the preceding 14 days have tested positive for Covid-19.” *Id.* This is from *all sources*, including employee self-reported confirmed positive and presumptive positive numbers, and not just Project UV (which, along with the passage of time, is a reason why this statistic differs from Amazon’s earlier Offer of Proof). *Id.*

Specifically, to Amazon’s current knowledge, as of today, January 7, 2020 and the preceding 13 days, 556 individuals were tested by Project UV, with 24 reporting positive. *Id.* ¶ 3. Additionally, during this time frame, 194 individuals who are active BHM1 employees reported to Amazon or BHM1 leadership that they had tested positive with 126 confirmed cases (having laboratory documentation) and 68 presumptive cases (Antigen positive test or having a verbal or documented diagnosis from a health care provider). *Id.* ¶ 4. There is no indication the rate is increasing. *Id.* ¶ 6. Finally, the total number of individuals in the BHM1 facility during this period (all 14 days cumulatively and including both Amazon employees and third parties) was 7,575. *Id.* ¶ 2.

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<sup>20</sup> Amazon could not calculate an accurate facility-wide test rate because it does not know whenever someone who was at the facility decides to take an off-premises COVID test. It is only aware of on-site Project UV COVID tests, which are not taken by everyone and are voluntary, or if an associate reports a positive COVID test result. *See* Supp. Stone Cert. ¶¶ 3–4. Associates are not required to notify Amazon if they test negative as a result of a test administered by a local clinic, hospital, or other health agency. *See id.*

In this 14-day period, combining the number of positive results through Project UV, together with the employee self-reported confirmed positive and presumptive positive numbers, results in an overall positivity rate, as compared to the site individual population (7,575), of about 2.88% for this time period. ***2.88% is less than 5%, and this rate is not increasing, so there is no discretion for the Regional Director to order a mail ballot election under Aspirus condition number 2.*** 370 NLRB No. 45, slip op. at 5–6. Ordering one in these circumstances would be an abuse of discretion.

- b. *Viewed in the Light of BHM1's Size, and Amazon's Extraordinary Control Measures Proposed to Seal Off the Election Process From General Public Contact, There Is No "Outbreak."*

The Board in *Aspirus* further stated that an employer needs to provide “how many individuals present in the facility within the preceding 14 days have tested positive for Covid-19 (or are awaiting test results, are exhibiting characteristic symptoms, or have had contact with anyone who has tested positive in the previous 14 days).” 370 NLRB No. 45 at 7. This is in conjunction with whether or not there is an “outbreak” at a facility.

However, the Board never defined what constitutes an “outbreak,” much less in conjunction with a facility with an overall Amazon employee complement on any given day of more than 6,000 people, and 7,575 total individuals who have been present in BHM1 in the last 14 days.<sup>21</sup> There is no real medical definition of “outbreak,” either, especially for a large facility like BHM1. Gupta Cert. ¶ 24. Here, extrapolating from what the Board opined in *Aspirus* concerning condition number 2 “positivity rates,” the Regional Director should assume that ***at least 5% or more*** of the facility’s total population of individuals needs to test positive (or fall into the above *Aspirus* condition number 5 category) over the course of the prior 14-day period

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<sup>21</sup> Both the “all individuals” population and the “all Amazon employee population” of BHM1 are obviously larger than the bargaining unit. See Supp. Stone Cert. ¶ 2.

before there can be an outbreak. Thus, the underlying calculation to determine the percentage for *Aspirus* condition number 5, for BHM1, *is the exact same as the Approach 4 positivity rate calculation as for Aspirus condition 2, above.* Supp. Stone Cert. ¶ 5. And it should be, both due to the size and scope of the BHM1 facility, and that the “Approach 4” calculation is the *very best calculation* by Johns Hopkins University, the institution adopted by the Board in *Aspirus* as the lodestar for COVID rate calculations. *See* 370 NLRB No. 45, slip op. at 5-6 nn.22-24.

As noted above, BHM1’s positivity rate is 2.88% —i.e., 2.88% of the total number of individuals at BHM1, cumulative over the last 14 days from when this data was measured (on January 7), which falls into the category of “how many individuals present in the facility within the preceding 14 days have tested positive for Covid-19 (or are awaiting imminent test results).” Supp. Stone Cert. ¶ 4. 2.88% is less than 5%, so there is no outbreak at BMH1, under any reasonable definition of “outbreak.” Therefore, ***there is no discretion for the Regional Director to order a mail ballot election under Aspirus condition number 5, either.*** 370 NLRB No. 45, slip op. at 7. Ordering one in these circumstances would be an abuse of discretion.

As *Aspirus* requires, Amazon will supplement this initial submission and certify any changes after a manual election is directed, up to the day of the election itself. Supp. Stone Cert. ¶ 6.

3. The Regional Director Must Consider the Available Evidence About the Safety of Amazon’s Proposal.

In evaluating whether this case presents “circumstances . . . in which manual election can be safely conducted,” *Aspirus*, 370 NLRB No. 45, slip op. at 4, it would be arbitrary and capricious to disregard the available evidence about the safety of Amazon’s proposal, including Amazon’s Offer of Proof. The evidence is uncontradicted that the risk of transmission of the election zone is minimal.

As an essential business, Amazon has implemented and enforced detailed COVID-19 safety and PPE protocols for months. Amazon's associates, including all of the potential voters, have been thoroughly trained and have acted diligently and responsibly to protect themselves, and others, from exposure and infection. The 100 process improvements implemented at BHM1 in response to COVID-19, from day one of its operations, are a testament to Amazon's commitment to the safety of its associates. Here, Amazon witnesses would have testified that the COVID policies and protocols are rigorously enforced and have worked to substantially mitigate the risks of COVID-19 at BHM1 and other Amazon facilities around the world. *Neither the Union, nor the Region, offered any evidence that the policy or protocols were not effective or not enforced.*

Amazon's election plan must be measured against this backdrop of preparation, training and successful risk management. The Regional Director also must judge Amazon's plan against the level of competence and experience of the other employers that have argued unsuccessfully that regional directors across the country should direct a mail-ballot election in their cases. Amazon is not a specialty waste company proposing to retrofit part of its industrial facility in the future to meet applicable CDC standards. It is not a security company offering to clean its breakroom to a satisfactory level. It is not a waste-hauling company that contends it can clean and maintain its office space to an appropriate level. It is not a food service company offering to hold an election in an employee breakroom. It is not a mechanical piping and plumbing contractor offering to create unspecified protocols to respond to the Region's demands. And it is not a janitorial and carpet-cleaning business that did not even bother to argue that it could conduct a safe in-person election. Amazon is as different from those employers regarding COVID-19 experience and expertise as night differs from day. Amazon is not creating a risk

management plan out of whole cloth for the purpose of an election. It has been living its plan on a daily basis for more than ten months.

Amazon's plan meets all applicable CDC standards and it complies with the certifications required under GC 20-10, *Aspirus*, and GC 21-01. More than that, the plan also addresses *the specific concerns* that Regional Directors have raised in other cases to conclude that an in-person election would increase virus spread. For example, Regional Directors have repeatedly objected to extended voting periods as presenting an unacceptable amount of person-to-person contact and, therefore, risk of COVID-19 exposure or transmission. Amazon's plan addresses these concerns in several ways—the election process would be outside; social distancing and other precautions would be in place outside and inside the voting bubble; the 3,600-square-foot voting area would never have more than twenty people in it; the plexiglass booths would prevent any person-to-person contact in the voting area; the sophisticated PPE and fans utilized in the area would prevent any contact with any potentially contaminated air; reporting times could be staggered to manage the number of voters in line; and the potential voters have all been working on a daily basis in the environment proposed by Amazon.

Importantly, this case is different from any other in that Amazon proffered un rebutted medical experts, Dr. Gupta and Dr. Lipkin, who opined on the safety and appropriateness on the election arrangements. They would have testified that participating in the election would present no additional marginal risk to either associates or other non-employee election participants. Given the importance of this type of evidence, the Regional Director should reconsider and reverse her apparent decision foreclosing Amazon from putting in a complete record on this issue. Amazon was ready to present three fact witnesses, (b) (6), (b) (7)(C), (b) (7)(A), Mr. Stone, and Dr. Gupta, on hearing day 3, and Dr. Lipkin, on hearing day 4, to present testimony allowing the Regional



Director to sufficiently consider whether a manual or mail-ballot election would be appropriate here. Given the Board’s recognition in *Aspirus* that “the specific facts of a given case” are essential to the analysis, *see* 370 NLRB No. 45, slip op. at 6, preventing Amazon from presenting this crucial evidence was arbitrary and erroneous, and the Regional Director should reverse that decision.

The Region should also reject the Union’s request to strike the Certification of Dr. Ian Lipkin. The Union’s objection that Dr. Lipkin was not identified by name at the hearing is meritless—especially given the way that the hearing unfolded.<sup>22</sup> Amazon’s proffer of December 22, quickly assembled though it was, identified Dr. Lipkin as an advisor to the Amazon WHS Team in charge of COVID protocols. *See* Proffer of December 22 (offered to Hearing Officer and Union that day), at 38, 41–42. That proffer made clear that Dr. Lipkin was an advisor for the *very protocols that are in contention*:

For example, Dr. Lipkin has provided the Amazon WHS Team with ongoing guidance and information regarding transmission risk; management of confirmed

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<sup>22</sup> Both the Regional Director and the Hearing Officer know the following background:

1. After no stipulation had been reached on December 21, the Union unexpectedly gave up every single one of its remaining twenty-plus disputed job positions during that evening, thus causing a rapid reshuffling of Amazon’s trial plan;
2. Then the Hearing Officer informed Amazon’s counsel by email the morning of December 22 before the hearing that a proffer would be required of Amazon’s witnesses *for that day*;
3. Amazon’s lead counsel had little notice of the email because of the time difference, and asked for a 90-minute hearing extension to prepare a proffer for those witnesses, which ended up being a substantial document totaling approximately 73 double-spaced pages;
4. The Hearing Officer only granted a 60-minute extension; and
5. Amazon’s lead counsel submitted the best proffer he could during that time. *See* U. Response, Ex. 2 (“This is the best I could do on the short notice.”). Even that early, the proffer mentioned Dr. Lipkin as a medical expert advising Amazon (see above).

Amazon’s plan for that trial day was to have three witnesses whose testimony likely would have carried into the next day (the certifications for these witnesses alone were 120+ pages), with Dr. Lipkin thereafter. Given the substance of the prior witnesses’ testimony, Dr. Lipkin was obviously not going to testify on December 22, so there was no reason why Amazon would have identified him as a witness for that day, and fall within the Hearing Officer’s request.

COVID-19 cases; contact tracing procedures; cleaning and sanitization measures; temperature checks and COVID-19 symptom screening; and COVID-19 testing. Dr. Lipkin's work also informed Amazon's communications to associates about COVID-19.

*Id.* at 41–42. The Union was fully on notice of the potential for Dr. Lipkin to be in a perfected proffer. Moreover, the Union fails to explain how the inclusion of Dr. Lipkin's certification would prejudice it (beyond because it is compelling evidence).<sup>23</sup> If the Regional Director nonetheless grants the Union's motion to strike, by the same logic it should exclude the Declaration of Dr. Suzanne E. Judd. Unlike Dr. Lipkin, there really was no mention of Dr. Judd at the hearing, and the first Amazon's counsel heard of Dr. Judd was in the Union's response to Amazon's proffer.

But the Regional Director should not exclude the parties' evidence. As *Aspirus* requires, the Regional Director should evaluate all available and relevant facts, including the protocols of the proposed outdoor election. That includes, at minimum, an assessment of the employer's detailed safety procedures and the prevailing circumstances at the employer. *Id.* at 4, 7 n.33.<sup>24</sup>

4. The *Aspirus* Test Should Be Construed or Modified to Comport With Reality.

The Board decided *Aspirus* in November 2020 at the height of predictions that the pandemic would be at its worst in the wake of Thanksgiving and the holiday season. The Board

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<sup>23</sup> The Union ignores that the extension granted until December 28 was for the very purpose of perfecting the proffer. The sole limitation that lead counsel for Amazon recalls being stated (off the record) was that the final Amazon proffer version, although it would have new material, would not be "250 pages long." (It was not). The Hearing Officer imposed no limitation on witnesses in describing her final ruling on the perfected proffer. (Tr. 189 ("The Employer has been directed to make an offer of proof in writing. In the off-the-record discussion, based on length of the proffer, the Employer has asked for more time. . . . *They agreed to finalize and submit all materials in their offer of proof by the 28th.*" (emphasis added))). Dr. Lipkin was part of the "finalized" Offer of Proof, in accordance with this direction.

<sup>24</sup> At a minimum, even if the Regional Director does not permit the reopening of the record to accept in-person testimony, the Regional Director should accept Amazon's Offer of Proof for the truth of the matter asserted. That result obtains because the Hearing Officer did not actually reject Amazon's Offer of Proof. See Guide for Hearing Officers in NLRB Representation and Section 10(k) Proceedings at 38.

hardly suggested that the decision was intended to be static and non-responsive to changes (such as vaccines and anticipated case reductions as we move into February) or scientifically supported protocols shown to provide a safe polling place for voters, Board agents, and observers alike.

*Aspirus* is not and should not become a de facto mail-ballot election rule, effectively requiring Regional Directors to direct mail-ballot elections regardless of the particular circumstances presented in each case. In that context, the Regional Director should address in her decision the following additional issues:

- Although the Board indicated in *Aspirus* (370 NLRB No. 45, slip op. at 1 & n.3) that these election issues are “non-litigable,” it makes no sense, and indeed violates due process, for the Board to create a fact-intensive test, but then a Regional Director to bar a party from presenting evidence to make its case in relation to the test.
- The ostensible goal of *Aspirus* condition number 2 is to assess “the severity of the outbreak in the specific locality where the election will be conducted.” *Id.* at 5. Here, the Board identified two categories of statistics—the 14-day trend and the positivity rate—as relevant to assessing the severity of the outbreak. But the Board notably conceded that both categories only “suggest” unacceptable local transmission and/or infection rates. *Id.*

However, these two metrics the Board identified are *ill suited* for assessing the actual “severity of the outbreak.” As for the 14-day trend, an otherwise stable or low level of infection can have marginal increases upward, without suggesting a real health concern in the area. As for positivity rates, they are reliable only if the overall testing group is large *and* has not already self-selected as “sick.” For example, if most people receive or intend to receive a vaccine, they will not end up testing regularly, but only if they feel sick. Similarly, it is more likely that persons who are not feeling well are more likely to get tested. This will lead to skewed statistics relating to the aggregate population. *See, e.g.*, Johns Hopkins Coronavirus Resource Center (a site the Board refers to in GC 21-01) (“It is important to note that test positivity is a measure of testing capacity and while it can provide important context about case totals and trends, it is NOT a measure of how prevalent the virus is in communities. **Policy decisions, like openings and closings or interstate travel, should not be determined based on test positivity alone.**”), <https://coronavirus.jhu.edu/testing/differences-in-positivity-rates> (last visited Jan. 7, 2021).

- Amazon’s position on factors that the Regional Director should examine, including but not limited to the Johns Hopkins University Coronavirus Resource

Center’s “Approach 4,” *see* III.A.2, *supra*, better aligns with assessing the “severity of the outbreak” for election purposes, and the geographic “zone” and metrics Amazon proposes are better suited for this goal, given the nature of Amazon’s protocols, which include an outdoor election.

- The *Aspirus* condition number 2 metrics are not meaningful concerning employee safety for employees who are essential workers who will be coming to work anyway and protected by substantial safety-related protocols.
- The *Aspirus* condition number 2 metrics are also rooted in early COVID-19 pandemic efforts to assess when the country or regions would “shut down” or “reopen,” and that Alabama is well past that point in time. A manual election under *Aspirus* seemingly has to surpass lockdown standards applicable to the “highest risk category” of locked down in-person activity, such indoor dining, indoor sports clubs, etc.
- Obviously, the Board did not define “outbreak” for *Aspirus* condition number 5. Amazon submits, in conjunction with the reasoning of *Aspirus* condition number 2 and the applicable science, that the Regional Director and Board should set this rate at 5% or higher of the total combined unique population of a facility (as measured over 14 days) being infected before discretion to order a mail-ballot election becomes allowable.
- In *Aspirus*, the Board also did not deal with any of the arguments below (see Sections III.B.), except for voter turnout. Amazon urges that the Regional Director do so.

5. The Union’s Ethics-Based Objections to a Manual Election Lack Merit.

With the uncontradicted evidence against it, the Union has claimed purported “ethics” violations if NLRB agents lead the manual election process in conjunction with Amazon hosting the election with enhanced safety protocols per GC Memo 20-10. (Tr. 193–94). The source of this ethics concern is groundless, and, indeed, ludicrous, for several reasons.

First and foremost, Amazon has never proposed to pay or reimburse Board agents or Union observers for executing any of their election assignments, or for any other reason. There is no “thing” of material value that Amazon seeks to “give” to the assigned agents or observers. Most of what the Union complains about appears to be lodging and transportation (assuming that Board agents from outside of Birmingham do not use their own personal vehicles, as they easily

could for a 2.5-hour drive to Bessemer from Atlanta). But Amazon is not seeking to pay for transportation, lodging, food, or other related costs incurred by the agents or observers. Amazon will not pay for their hotel rooms or bus seats, for example.

Second, there need be only a handful of Board agents involved (three per voting tent), so this concern is overwrought. Even if any Board agents had to travel into Bessemer, the Board can undoubtedly ensure that a limited number of its own agents can follow its own ethical rules.

Third, Amazon's proposed election arrangements amount only to logistical and operational support for a socially distant and safe election process during the voting period—arrangements similar to those already available to keep employees safe while working. That is why, for example, Amazon is proposing free testing, temperature checks, and other structural provisions for the election site. Employers have for decades provided like support for Board agents in traditional election settings; indeed, employers generally host Board agents when they conduct elections at the employer's property, including the provision of room(s), table(s), chair(s), bathroom(s), and other items. The Union's ethics-based claim may be a veiled attack on elections being held on employer property altogether, given that most election-site arrangements (i.e., ownership or lease of the facilities, security services, overhead, electricity and utilities, etc.) are paid for by the employer. But that has been the standard practice for years. *See NLRB Casehandling Manual, Part 2, Representation Proceedings* (Sept. 2020) § 11302.2 ("The best place to hold an election, from the standpoint of accessibility to voters, is somewhere on the employer's premises. In the absence of good cause to the contrary, the election should be held there.").<sup>25</sup>

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<sup>25</sup> Nor would anything that Amazon is proposing constitute a benefit or a "thing of value" to the Union or employees. *See, e.g., Oaktree Capital Mgmt., LLC*, 353 NLRB 1242, 1280 (2009) (finding that allowing union representatives to park for free at the employer's place of business assisted the negotiating process and did not inure to the benefit of any union employee).

Due to COVID-19, Amazon understands that the “election host” obligations for employers have increased; however, they remain in kind with the traditional host functions and do not rise to the level of impermissible interference with or corruption of Board agents—and certainly not “gifts.” Critically, GC Memo 20-10 at 3 *requires* employers to not only host the elections but provide specific and enhanced measures for safety, including “plexiglass barriers of sufficient size to protect the observers and Board Agent to separate observers and the Board Agent from voters and each other, . . . as well as masks, hand sanitizer, gloves and wipes for observers”). If Amazon’s proposed election arrangements somehow violate some ethics rules, then GC Memo 20-10 and *Aspirus* must be reconsidered as well.

Fourth, the ethics rules have definitions and exclusions that signal no ethics problem exists. Applicable federal regulations on impermissible “gifts,” 5 C.F.R. § 2635.202, define a gift as follows:

Gift includes any gratuity, favor, discount, entertainment, hospitality, loan, forbearance, or other item having monetary value. It includes services as well as gifts of training, transportation, local travel, lodgings and meals, whether provided in-kind, by purchase of a ticket, payment in advance, or reimbursement after the expense has been incurred.

Amazon’s proposed election procedures simply do not contain any “gift” to Board agents under this regulatory definition because they would not be receiving anything of monetary value or otherwise. For example, they would not get to keep the PPE used for the election, nor would

they get to use the additional seats or rooms (if any) blocked out for social distancing purposes, should bus travel or hotel rooms be required.<sup>26</sup>

Moreover, the regulatory definition in 5 C.F.R. § 2635.203 excludes numerous items from the gift definition, which could easily be considered akin to the manual election procedures in this case:

(1) Modest items of food and non-alcoholic refreshments, such as soft drinks, coffee and donuts, offered other than as part of a meal;

...

(8) Free attendance to an event provided by the sponsor of the event to:

(i) An employee who is assigned to present information on behalf of the agency at the event on any day when the employee is presenting;

(ii) An employee whose presence on any day of the event is deemed to be essential by the agency to the presenting employee's participation in the event, provided that the employee is accompanying the presenting employee;

...

(9) Any gift accepted by the Government under specific statutory authority, including:

(i) Travel, subsistence, and related expenses accepted by an agency under the authority of 31 U.S.C. 1353 in connection with an employee's attendance at a meeting or similar function relating to the employee's

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<sup>26</sup> Nor is the individual limitation on the solicitation or receipt of gifts under 5 C.F.R. § 2635.101(b)(4) implicated here. This regulatory provision provides that “[a]n employee shall not, except as permitted by subpart B of this part, solicit or accept any gift or other item of monetary value from any person or entity seeking official action from, doing business with, or conducting activities regulated by the employee’s agency, or whose interests may be substantially affected by the performance or nonperformance of the employee’s duties.” While these provisions seem to broadly prohibit a Board agent from accepting anything of monetary value, Section 2635.101(b)(14) provides additional context by directing that executive branch employees “shall endeavor to avoid actions creating the appearance that they are violating . . . the ethical standards set forth in this part.” 5 C.F.R. § 2635.101(b)(14). In particular, whether the circumstances create such an appearance “shall be determined from the perspective of a reasonable person with knowledge of the relevant facts.” *Id.* Here, the Board has *directed* employers wishing to hold manual elections to take particular steps in order to ensure the safety of voting employees, observers, and Board agents. In light of those prescribed safety steps, a reasonable observer with knowledge of the relevant facts would not likely conclude that a Board agent’s use of sanitized facilities during the election is improper or could be perceived as improper.

official duties which take place away from the employee's duty station, provided that the agency's acceptance is in accordance with the implementing regulations at 41 CFR chapter 304;

. . .

*See also* 5 C.F.R. § 2635.204 (containing additional regulatory exclusions from impermissible gifts to governmental agents, including de minimis gifts worth \$20 or less and widely attended events). Any tangential indirect benefits to a person arising from safety protocols is of this nature, not a true “gift.”

In sum, what Amazon is proposing here falls well short of some impermissible “gift” to Board agents (or the Union or Amazon associates). Amazon only seeks to create a safe and secure on-site election setup so that a safe and fair election may take place. That support goes directly, and only, to the Board's mission and Board agent duties—and does not constitute providing some special benefit or thing of value to government employees in violation of ethics rules. Should the Union or Region identify, however, a material ethics concern, Amazon remains available to discuss alternative arrangements that eliminate this concern altogether. And, in conjunction, the Region could refer the matter to the Board's Designated Agency Ethics Officer for review rather than categorically reject a manual election based on purported ethics concerns.

**B. Even Assuming the Regional Director Has Discretion to Order a Mail-Ballot Election, the Serious Downsides to a Mail-Ballot Election in This Case Outweigh Any Speculative Avoidance of Virus Spread.**

Even if the Regional Director concludes that she has discretion under *Aspirus* to order a mail-ballot election because one or more *Aspirus* factors are satisfied, the Board's decision was clear that such “situations *do not require a mail-ballot election*.” 370 NLRB No. 45, slip op. at 8 (emphasis added). “Regional Directors must continue to exercise their discretion in this area.”

*Id.* Given both the extraordinary infection controls put in place by Amazon and the lack of any



scientific basis to conclude that the virus will spread under those protocols, *see* Section II.B.2, and the problems with mail-ballot elections (discussed below), the Regional Director should direct a manual election if any questions are considered close. A rigid application would be an abuse of discretion given the Board’s reaffirmed preference for manual elections. The following downsides to Board mail-ballot elections all reinforce that the prudent course here is a Board manual election.<sup>27</sup>

1. A Mail-Ballot Election Will Result in Significant and Unnecessary Delay in Resolving the Question Concerning Representation Found By the Region.

Directing a mail-ballot election in this case would not serve the Board’s oft-cited goal of expeditiously resolving questions of representation. The Act requires the Board to adopt election procedures that ensure that employees’ votes are “recorded accurately, efficiently and speedily.” *NLRB v. A.J. Tower Co.*, 329 U.S. 324, 331 (1946); *see also* Representation—Case Procedures, Final Rule, 79 Fed. Reg. 74,308, 74,400 (Dec. 15, 2014) (“2014 Final Rule”) (referring to the Board’s “goal of expeditiously resolving questions of representation” and “interest in certainty and finality of election results”). A mail-ballot election in the circumstances of this case would unjustifiably delay this process.

Here, there is no guarantee that a Board mail-ballot election would occur earlier than a Board manual election, and there is every reason to believe it would conclude much later than a manual election, especially here. As a general matter, mail-ballot elections almost always take longer to conduct than manual elections. On the facts of this case, moreover, the risk is especially pronounced. The Board somehow would have to manage a process of mailing nearly

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<sup>27</sup> Political elections involving mail ballots are quite different. For those elections, there is still an option to vote in person, the voter has requested a mail ballot in most cases, and the state creates, maintains, and updates a voter address roll continuously, all of which contribute to election security. None of those features is present in typical Board mail-ballot elections.

6,200 ballots to addresses, with the necessary follow-up work associated with re-mailing to new addresses and the inevitable issues arising with associates claiming not to have received ballots. Moreover, there are well-publicized issues with the United States Postal Service's ability to guarantee reliable and timely delivery of mail, including mail ballots for use in local, state or federal elections.<sup>28</sup> Based on these public concerns about the capacity and capability of the USPS (even assuming that the Board is equipped to handle this massive mail distribution with social distancing, remote work, and other restrictions to prevent virus transmission while completing the mail ballots), there is no certainty that a mail-ballot election would be more efficient or reliable than a manual-ballot election, putting aside the many other reasons that a mail election could delay the final outcome.

In contrast to mail-ballot elections, where the voting period alone extends over several weeks, manual voting typically takes place on a single day or, at most, a few days.<sup>29</sup> *See NLRB Casehandling Manual, Part 2, Representation Proceedings* (Sept. 2020) § 11336.2(d) (deadline for returning mail ballots should usually be two weeks from the date of mailing to the date of return); *id.* § 11302.1 (manual elections should be scheduled “on the earliest date practicable” and “may stretch over several days, where necessary”); *see also* Eli Rosenberg, *The Latest Frontier in Worker Activism: Zoom Union Meetings*, *Washington Post* (Sept. 11, 2020) (counting mail ballots added three weeks to election process for unit of 89 employees),

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<sup>28</sup> The risk of lost or delayed mail ballots is even greater here due to the significant ongoing issues with mail delivery in Alabama. *See, e.g.,* Stephen Gandel, *More Than One Million Packages Will Not Reach Their Destination This Christmas*, CBS News (Dec. 24, 2020), <https://www.cbsnews.com/news/holiday-shipping-delays-million-packages-christmas/>; John Sharp, *Mail Delays Loom Over Alabama Right Before Christmas: ‘Significant and Very Bad,’* Alabama.com (Dec. 22, 2020), <https://www.al.com/news/2020/12/mail-delays-loom-over-alabama-right-before-christmas-significant-and-very-bad.html>. WAFF 48 Digital Staff, *USPS Experiences Delays at Birmingham Distribution Center*, WAFF 48 (Dec. 19, 2020), <https://www.waff.com/2020/12/19/usps-delays-birmingham/>.

<sup>29</sup> Amazon proposes that the manual election be held over two to four consecutive days, depending on how many agents the Region intends to use. *See* Offer of Proof at 1–2.

<https://www.washingtonpost.com/business/2020/09/10/unions-zoom-pandemic>. The additional requirements and complexities associated with mail ballots also extend the length of the ballot *count* process because each envelope and signature has to be examined—which, as discussed below, can give rise to additional issues and delays—before the ballots can even be extracted and counted.<sup>30</sup>

Further, both the Board and courts have stated that the accurate and efficient recording of employee votes includes “certainty and finality of election results.” Representation-Case Procedures, Final Rule, 84 Fed. Reg. 69,524, 69,529 (Dec. 18, 2019) (quoting *Certainfeed Corp. v. NLRB*, 714 F.2d 1042, 1053 (11th Cir. 1983)). Election procedures that, by design, will *increase* the potential for post-election disputes conflict with the Board’s goals of accuracy and efficiency because the election results are not certain or final until those disputes are definitively resolved. *See id.* at 69,529 & n.20 (noting that “certainty and finality must wait until the conclusion of post-election litigation” and the “pendency” of election disputes that “could linger on after the election for weeks, months, or even years before being resolved” is “a barrier to reaching certainty and finality of election results”); *A.J. Tower*, 329 U.S. at 332 (affirming election policy adopted by the Board because the policy gave “a desirable and necessary finality to elections”); *see also AFL-CIO v. NLRB*, 471 F. Supp. 3d 228, 242 (D.D.C. 2020) (generally agreeing with the Board’s reasoning that the pendency of post-election disputes is a detriment to “finality in terms of definitiveness” of election results).

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<sup>30</sup> Assuming that it takes about 2 minutes, on average, to prepare, stuff, and complete each envelope prior to mailing, it would take 200 hours to completing the mailing of the ballots to approximately 6,200 voters—the equivalent of more than 8 days for a Board agent working 24 hours per day. This does not include other administrative issues that arise only in mail-ballot elections, such as answering employee questions after ballots have been mailed, responding to reports of duplicative and missing ballots, and processing the virtual count after ballots have been received.

Here, the risk of substantial delays and uncertainty with mail ballots is not speculative or premature. As outlined below, mail ballots raise numerous issues not present in manual elections. Regardless of how the Board has balanced the risk of delay in the context of elections involving dozens—or even hundreds—of voters, the potential for post-election disputes is undeniably and substantially greater with eligible voters around 6,200.

- a. *Mail-Ballot Elections Increase Risk of Delay Due to Elevated and Prolonged Chances for Coercion and Other Interference With the Voting Process.*

The lack of direct Board supervision over the mail-ballot voting process increases opportunities for improper coercion and interference. *See Mission Indus.*, 283 NLRB 1027, 1027 (1987) (“[M]ail ballot elections are more vulnerable to the destruction of laboratory conditions than are manual elections, due to the absence of direct Board supervision over the employees’ voting.” (citing *Brink’s Armored Car*, 278 NLRB 141, 141 (1986))); *Thompson Roofing, Inc.*, 291 NLRB 743, 743 n.1 (1988) (same); *Wilson & Co., Inc.*, 37 NLRB 944, 944 (1941) (mail balloting “has frequently raised material and substantial issues relating to the conduct of the ballot and the election”); *see also NLRB v. Cedar Tree Press, Inc.*, 169 F.3d 794, 797–98 (3d Cir. 1999) (discussing absentee mail ballot procedures in NLRB elections and noting that they “would add an additional layer of bureaucracy and complexity which, if not handled properly, could compromise the fair election process”).

The showing of interest process that gave rise to this election was strange enough, with the Union originally estimating the size of the bargaining unit as a mere 1,500 employees, but then mysteriously being able to offer purported authorization cards sufficient for *a unit of nearly 5,600 employees* within two weeks of being challenged. This raises a specter of coercion, interference, or even possible fraud, a possibility that would loom larger if the Regional Director directs a mail-ballot election. While Amazon appreciates that the Board may have attempted to

develop certain procedures with mail ballots to reduce the risk of interference during the “unsupervised” voting period, these measures cannot match the safeguards in a manual election or combat interference that “can easily occur in a mail ballot situation.” *San Diego Gas & Elec.*, 325 NLRB 1143, 1150–51 (1998) (Hurtgen & Brame, dissenting). Recent Board election cases show that actual or possible coercion continues to threaten the integrity of mail-ballot elections during the COVID-19 pandemic, particularly where the employer is open and employees are coming in to work. For example, in *GreenWaste Recovery, Inc.*, Case 32-RC-260301 (Decision and Order, Aug. 28, 2020) (not reported in Board volumes), after a mail-ballot election in a unit with 83 eligible voters, the union alleged that the secrecy of ballots was compromised based on a number of incidents where anti-union employees allegedly asked other employees for their ballots, offered to collect other employees’ ballots, requested other employees’ ballots to photograph them, and offered to help fill out other employees’ ballots. In another recent case, the Board has actually granted review of issues regarding improper mail-ballot solicitation, in a unit with 113 eligible voters, in order to reconsider the standards set by *Fessler & Bowman, Inc.*, 341 NLRB 932 (2004) on objectionable collection of ballots and whether solicitation of ballots is itself objectionable. *See Prof'l Transp., Inc.*, Case 32-RC-259368 (Dec. 2, 2020) (not reported in Board volumes).

Here, the risk of coercion or interference is especially problematic given the size of the BHM1 unit, the likely length of any mail-ballot voting period, and the serious concerns around how the Union obtained a sufficient showing of interest with validated signatures. The real possibility of centralized or decentralized interference with mail ballots as compared to a Board-supervised manual election should trouble the Region. *Cf. UGL-UNICCO Serv. Co.*, 355 NLRB 748, 750 (2010) (Schaumber, dissenting) (discussing technology that would allow employees to

vote remotely and stating that it “could erode the sanctity and privacy of the ballot booth and subject the process of voting to scrutiny and coercion by interested parties, the same defects that often taint unsupervised card checks”). For this additional reason, a manual election—with its attendant safeguards, including direct Board oversight over voting—is the only procedure that fully safeguards the right to vote and presents parties from directly interfering with the voting process. A manual election, taking place outside, would thus avoid the problems in *GreenWaste Recovery* and *Professional Transportation*.

b. *Mail Ballots May Be—and Frequently Are—Lost or Delayed, Thereby Prolonging the Election Process.*

Mail-ballot elections frequently give rise to disputes over *lost or delayed* ballots, and the Board has repeatedly and recently held, including within the last month, that “the possibility that ballots may be lost or delayed in the mail” is “one reason why manual elections are, and should be, preferred.” *Tredroc Tire Servs., LLC*, Case 13-RC-263043 (Dec. 8, 2020) (not reported in Board volumes) (in an election with 13 eligible voters that was decided by a single vote, one employee mailed a ballot that never arrived at the Regional Office); *Promowest Prods., Inc.*, Case 09-RC-261089 (Nov. 25, 2020) (not reported in Board volumes) (in election with 46 eligible voters, 7 employees mailed ballots that did not arrive in time for the tally); *Quickway Transp., Inc.*, Case 09-RC-257491 (Oct. 26, 2020) (not reported in Board volumes) (election with 69 eligible voters, at least 8 employees mailed ballots that did not arrive in time for the tally); *see also Residence Inn By Marriott at The Johns Hopkins Med. Campus*, Case 05-RC-268024, Union’s Objections to Election (Dec. 31, 2020) (objecting to mail-ballot election based on Region’s failure to “allow enough time for mail ballots to arrive at the Region 5 Office”); *St. Luke’s Hosp.*, Case 01-RD-267972, Employer’s Objections to Conduct of the Election (Dec. 22, 2020) (stating that “a number of eligible voters reported not receiving ballots and not being able

to reach [Region 1] to request a new ballot” during the voting period; alleging that employees’ “inability to reach the Board to request a duplicate ballot disenfranchised voters”; and “[e]ven when employees were able to get through and request duplicate ballots, they either did not receive them or did not receive them in time to vote”); *Allied Universal Sec. Servs.*, Case 05-RD-266913, Union’s Objections to the Election (Nov. 24, 2020) (objecting to mail-ballot election based on “widespread mail delays and irregularities during the time frame that ballots were due to be sent and returned”).

Likewise, *Western Wall Systems, LLC*, Case 28-RC-247464 (Apr. 16, 2020), a mixed manual and mail-ballot election case with seven mail-ballot voters, is another case that “reveals the many potential problems inherent in mail ballot elections.” In *Western Wall*, the employer asserted that most, if not all, of the seven mail ballot voters did not receive ballots by the date specified by the Region; one of the voters who requested a duplicate ballot never received one; three duplicate ballots were unsigned and were voided; two duplicate ballots were returned after the day of the count and not included in the tally; and one voter’s original and duplicate ballots were returned to sender. *See also Fontanini Foods*, Case 13-RC-257636, Employer’s Request for Review (July 13, 2020) (a mail-ballot election with 401 eligible voters where the employer asserted that it received several complaints from employees regarding the mail-ballot election procedure, including at least five employees who experienced issues reaching the NLRB via the distributed contact information; at least two employees who were charged fees by USPS to receive the NLRB’s mail-ballot kit; several employees who failed to receive a ballot kit; and other employees who received multiple ballot kits); *Ingalls Mem’l Hosp.*, Case 13-RC-260919 (Second Notice of Election issued, September 29, 2020) (mail-ballot election with 337 eligible voters had to be repeated due to lost ballots).

It does not take a leap in logic to expect that the number of lost or delayed ballots in a proposed bargaining unit of nearly 6,200 employees will be exponentially greater than the above examples, which one would have thought—given their small sizes—should have been manageable.

c. *The Massive Administrative Burden and Voter Confusion With Mail Ballots Will Lead to Delays Compared to a Manual Election.*

In addition, a large portion of BHM1’s workforce consists of younger associates who tend to change their addresses more frequently and rarely receive or send mail as a primary source of communication. This could create issues if the Region has to mail multiple ballots to updated addresses, as this would increase the potential for disputes over lost or delayed ballots as well as confusion and disputes over whether and which ballots the Region should count. *See, e.g., Newburg Egg Corp.*, Case 03-RC-267766 (Dec. 10, 2020) (concerns about the potential disenfranchisement of voters where many employees received mail at post office boxes or multi-family dwellings, which could decrease the likelihood of timely delivery of the mail-ballot packages and “could be relevant to whether a mail-ballot election is appropriate”); Rosenberg, *The Latest Frontier in Worker Activism: Zoom Union Meetings*, *supra* (union organizer describing recent mail-ballot election where ballots had to be sent out to multiple addresses for workers who had moved during the pandemic—the addresses their employer had on file, plus their new addresses—and noting that if two ballots had been returned for a person, the completed ballots would have been contested).

d. *Delays Can or Will Result From a Host of Other Technical and Administrative Issues That Do Not Exist With Manual Elections.*

Mail-ballot elections impose additional procedural instructions that are more numerous and complex than in manual elections, and, at the same time, there is no Board agent



immediately available to assist with questions.<sup>31</sup> Complexities that can trigger disputes over the validity of individual ballots based on confusing or contradictory directions, or where voters fail to fully comply with voting instructions, include, for example:

- **Disputes arising from technical issues with virtual vote count procedures.** *See, e.g., Stericycle, Inc.*, Cases 04-RC-260408 and 04-RC-260851, ALJ Report and Recommendation (Nov. 10, 2020) (not reported in Board volumes) (Zoom video feed cut out for several minutes during the mail ballot count).
- **Disputes arising from incomplete or incorrect ballot or voting information.** *See, e.g., Brink's Global Servs.*, Case 29-RC-260969 (Nov. 25, 2020) (Regional Director used a confusing and contradictory mail-ballot procedure, which led to a “dispute over the proper election procedures and unfortunate questions about the manner in which the election was conducted” where two ballots were received before the ballot count, but Regional Director had set a due date by which ballots had to be mailed and one ballot was not postmarked and the other was postmarked after the due date indicated by Regional Director).
- **Disputes about the existence and validity of voter signatures and compliance with voting instructions.** *See, e.g., Stericycle, Inc., supra* (dispute over voiding of unsigned mail ballot in election with 8 eligible voters; the case was transferred to Region 18, and the Regional Director for Region 18 ordered a rerun election); *Thompson Roofing*, 291 NLRB at 742 (mail ballot should be voided if it has no signature or has a name printed rather than signed); *see also Brink's Global Servs., supra* (voter marked and returned the sample ballot sent in the voting kit, instead of the official ballot).<sup>32</sup>

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<sup>31</sup> The recent general election bears out this point further. Given the novelty and other challenges associated with mail-ballot elections, various not-for-profit organizations, such as the Lawyers Committee for Civil Rights Under Law, which operates the “Election Protection” hotline, were besieged with calls from voters seeking assistance. <https://lawyerscommittee.org/voting-barriers-fueled-record-number-of-calls-into-election-protection-hotline-during-2020-election-season>. Assuredly, so too were election commissioners charged with managing elections locally. There is no similar apparatus available here at the Board to protect the franchise of nearly 6,200 potential voters at BHM1 if this election proceeds via mail, including nights and weekends when many Amazon associates may be on or off duty and need support.

<sup>32</sup> Although not necessarily representative of all mail-ballot elections, there have been multiple cases in which Regions have been forced to void and not count inordinately large percentages of ballots cast in mail-ballot elections. *See, e.g., Kings Sec. Servs., Inc.*, Case 02-RC-261519 (2020) (55 votes voided out of 153 cast, or 36%); *Del. Valley Residential Care, LLC*, Case 04-RC-257634 (2020) (10 votes voided out of 38 cast, or 26%); *Flex-N-Gate Chi., LLC*, Case 13-RC-265966 (2020) (38 votes voided out of 203 cast, or 19%). Disputes over whether the Region properly or improperly voided certain ballots and which ballots should be counted can significantly delay proceedings, including by causing the election to be rerun. *See Stericycle, Inc.*, Case 04-RC-260408, *supra*.

- **Concerns about disenfranchising voters who experience confusion within the mail-ballot instructions and process.** *See, e.g., Newburg Egg Corp., supra* (concerns about the potential disenfranchisement of voters due to misunderstanding the mail-ballot instructions and process “could be relevant to whether a mail-ballot election is appropriate”).

The serious potential for delay, including potentially weeks of video-based ballot reviews and post-election hearings while individualized ballot issues are resolved, could be enormous here, given the size of the voting unit. *See NCR Corp. v. NLRB*, 840 F.3d 838, 844 (D.C. Cir. 2016) (“individualized determinations” regarding mail ballots “would prove time consuming and potentially lead to extensive post-election litigation” (quoting *Cedar Tree Press, Inc.*, 169 F.3d at 797)).

The Board has not addressed the application of the *Aspirus* framework in the context of a voting unit even close to the size of the petitioned-for unit here. Indeed, the Board’s website indicates that since the start of the pandemic in early 2020, only six mail-ballot elections were conducted in units involving more than 1,000 eligible voters; none of those cases involved more than 2,000 voters, much less a unit anywhere close to the size of this one.<sup>33</sup> In light of the issues described above and the particular circumstances of this case, the potential for delay is simply

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<sup>33</sup> In these cases, it took approximately 57 days from the date of the notice of election to the certification of results/representatives. *See Hearthsides Food Sols., LLC*, Case 08-RC-264349 (Dec. 14, 2020); *Jersey Shore Univ. Med. Ctr., A Div. of Hackensack Meridian Health*, Case 22-RC-263932 (Objections to Election Withdrawn, Dec. 3, 2020); *NSMC Healthcare, Inc. – Salem Hosp.*, Case 01-RC-267109 (Dec. 2, 2020); *AM/NS Calvert, LLC*, Case 15-RM-246203 (Oct. 22, 2020); *MH Hosp. Manager, LLC*, Case 10-RC-257615, (Sept. 28, 2020); *Falck USA, Inc.*, Case 21-RC-258117 (July 7, 2020). Thus, even for these *much smaller* cases, the mail-ballot election process took weeks longer than would have a manual election.

The mail ballot election conducted in *Kaiser Foundation Health Plan, Inc., et al.*, Case 32-RC-005775, ALJ Report and Recommendations on Objections (July 14, 2011), involving approximately 45,000 eligible voters, also is instructive. The first election was conducted between September 13 and October 4, 2010, after which the petitioner filed **118 objections**, and a **23-day hearing** was held in February – March 2011. In July 2011, an ALJ issued a report recommending the original election be set aside and that a rerun election be conducted, after which nearly 2 more years of litigation ensued. The results of the second election were finalized in May 2013—**over 2.5 years after the first election took place**.

too great to support holding a mail-ballot election here. Instead, a manual election—conducted with Amazon’s extensive proposed safety protocols—is the only procedure that can adequately serve the interests of the Board and BHM1 employees in expeditiously resolving the question concerning representation here.

2. Both *Aspirus* and the Board’s Historical Precedent Warrant Directing a Manual Election to Avoid Dismal Turnout as Predicted By the Data Reviewed in *Aspirus*.

As noted above, *Aspirus* held that manual elections are superior to mail-ballot elections concerning employee participation levels. *Aspirus* reaffirmed that manual elections, among other things, “promote greater participation in the election process” and “serve as a tangible expression of the statutory right of employees to select representatives of their own choosing for the purpose of collective bargaining, or to refrain from doing so.” *Id.* at 1–2. The Board then expressly recognized a set of voting rate comparisons between manual and mail-ballot elections. After surveying a sample of official Board election statistics from more than 1,000 elections over this period, the Board noted mail-ballot participation rates that were, on average, 20% or 30% lower than in manual-ballot elections:

Internal Board statistics reflect that from October 1, 2019 through March 14, 2020, the Board conducted 508 manual elections in which 85.2 percent of eligible voters cast a ballot; during that same period, the Board conducted 48 mail-ballot elections in which only 55.0 percent of eligible voters cast a ballot. Similarly, from March 15 through September 30, the Board conducted 46 manual elections in which voter turnout was 92.1 percent and 432 mail-ballot elections in which turnout was 72.4 percent.

*Id.* at 2. As the Board observed, while “the mail-ballot participation rate has increased during the [COVID]-19 pandemic, . . . [it] continues to lag significantly behind the manual election participation rate (30% lower before March 15, 20% lower since).” *Id.* If the Board had intended that Regional Directors simply rubber-stamp requests for mail-ballot elections, there

would have been no need for this lengthy discussion of its preference for manual elections and the reasons for such a preference.

The trend of 20-30% *lower* turnout in mail-ballot elections—formally recognized by the Board in *Aspirus* at the very beginning of its legal analysis—should be especially troubling to the Regional Director. In this case, where the bargaining unit is roughly 6,200 employees, if the Regional Director orders a mail-ballot election, the data analyzed in *Aspirus* indicates there would at least be between 1,238 to 1,857 employees at BHM1 who would not cast votes or would do so incorrectly, as compared to the number in a manual election.<sup>34</sup> And this projection likely is low for this proposed bargaining unit that consists of large numbers of relatively young associates who have grown up in the digital age and are not nearly as accustomed to using the USPS as are older associates. Steve Benen, *A Hurdle for Young Voters: Unfamiliarity With the Post Office*, MSNBC (Oct. 31, 2018) (in context of the 2018 general election, discussing young voters’ reluctance to vote by mail due to unfamiliarity with USPS), <https://www.msnbc.com/rachel-maddow-show/hurdle-young-voters-unfamiliarity-the-post-office-msna1159941>. This outcome is unacceptable to Amazon and should be to anyone else, including the Union and the Region.

At least one other COVID-era election of size shows that turnout will be a problem and will lead to deadline extensions. *See Fontanini Foods*, Case 13-RC-257636, Employer’s

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<sup>34</sup> Based on data from the Board’s website and 163 total elections since *Aspirus*, it appears turnout in Board elections is *decreasing*, which should strengthen the Regional Director’s resolve to hold a manual election here:

- The average turnout rate for Board mail-ballot elections post-*Aspirus* (133 total) is 69.04%, which has dipped from the 72.04% reflected in *Aspirus*.
- The average turnout for manual elections post-*Aspirus* (6 total) is 86.80%, which has dipped from the 92.1% reflected in *Aspirus*.

(Note: 27 elections are not represented in the above totals and averages because full details on voting were unavailable at the time of this filing).

Request for Review at 5 (July 13, 2020) (recounting that the Regional Director *twice* extended the deadline for employees to return mail ballots where just 196 out of 401 mail ballots were returned to the regional office by the original deadline and just 30 more [a total of 227 out of 401 ballots] were returned by the first extended deadline).

Moreover, mail-ballot turnout could be even worse than a 20% or 30% drop off. *Aspirus* recounts that voter participation for mail-ballot elections pre-COVID was only 55% on average. 370 NLRB No. 45, slip op. at 2 (October 2019 to March 2020 statistics). Thus, if there were a mail-ballot election at BHM1 with voter turnout returning to those levels, which could easily (and, in fact, is likely to) happen given a gradual “return to normal” as the holiday season is over and vaccines are distributed, *Aspirus* signals that there would be a turnout rate of *only 55%* at BHM1. This would amount to *nearly 2,800 associates whose votes—and voices—will not be counted*.

It is contrary to the Act for the Regional Director to embark on a voting process that the Board and Regional Director already know—based on both the binding legal precedent of *Aspirus* and the experience of over 1,000 actual election cases—will end up excluding the voices of well more than 1,000 Amazon employees, and likely closer to 2,000 (or nearly 2,800) in these circumstances.

The Board has historically endeavored to maximize voter participation in elections. *See In re Baker Victory Servs., Inc.*, 331 NLRB 1068, 1070 (2000) (referencing “the Board's goal of ensuring maximum voter participation”); *Versail Mfg., Inc.*, 212 NLRB 592, 593 (1974) (noting that elections are to be scheduled “at times and places, including whatever special provisions appear to be appropriate, that will best insure maximum participation in light of what is known at the time the procedures are set up”); *see also* Memorandum GC 20-07, Guidance Memorandum

on Representation Case Procedure Changes, at 6 n.10 (June 1, 2020) (“Elections scheduled pursuant to election agreements will continue to be scheduled for the earliest date practicable following the approval of the agreement, taking into account employee participation. Thus, the dates selected for the election should be those that enhance the opportunity for employees to vote.”). Mail ballots have seen low enough turnout that they have been reversed by federal courts and the Board in the past. *See, e.g., Shepard Convention Servs., Inc. v. NLRB*, 85 F.3d 671, 675 (D.C. Cir. 1996) (“[T]he Board’s reversal of the Regional Director’s discretionary decision to conduct a manual election cannot be upheld. Had the Board left the decision intact . . . voter turnout might well have been higher. . . . It could hardly have been lower.”); *see id.* at 673 (noting that only 77 out of 438 eligible employees—or 17.5%—cast ballots during two-week mail-ballot election); *see also Int’l Total Servs.*, 272 NLRB 201, 201 (1984) (setting aside mail-ballot election where only 19% of eligible voters returned their ballots and 23% of eligible voters never received their ballots and urging the Regional Director and the parties “to work together to explore alternative election procedures in order to ensure that all eligible voters have an opportunity to vote and to maximize the probability of a representative vote”).

Indeed, the Board and the courts have long recognized the importance of balancing “the objective of [e]nsuring maximum employee participation in the election of a bargaining agent against the goal of permitting employees to be represented as quickly as possible.” *Fall River Dyeing & Finishing Corp. v. NLRB*, 482 U.S. 27, 48 (1987); *see also Clement-Blythe Cos.*, 182 NLRB 502, 502 (1970) (“The Board must often balance what are sometimes conflicting *desiderata*, . . . [ensuring] maximum employee participation in the selection of a bargaining agent, and permitting employees who wish to be represented as immediate

representation as possible.”). This also would ensure labor relations stability by allowing both Amazon and the Union to know as soon as possible what the election results are.

In this case, implementation of a manual ballot election completely aligns and better serves *both* the objectives of maximum participation *and* speed. Ensuring the rights of thousands to vote requires a manual election. There is no reason to accept a turnout rate of as low as 55%, based on data projections, in order to accommodate scientifically unsupported concerns that an outdoor manual election under robust protocols and social distancing will cause more individuals to get sick, when there could be a turnout rate from 86% to 92% with no material risk to Board agents or voters. Here, Amazon has submitted substantial evidence that its proposed protocols for a manual election in late January or sometime in February are safe, and the Union never rebutted that evidence. Here, the Regional Director should bear in mind that “the Board must adopt policies and promulgate rules and regulations in order that employees’ votes may be recorded *accurately, efficiently and speedily*.” *A.J. Tower Co.*, 329 U.S. at 331 (emphasis added). *Aspirus* did not change this long-established rule and the Regional Director should not imperil these primary duties.

Thus, based solely on *Aspirus*’s turnout data analysis based on more than 1,000 recent union elections, the Regional Director should choose a manual election in order to avoid the otherwise certain exclusion of thousands of employee voices. Amazon submits that the minimum turnout rate for an election this important, because it covers so many employees, should be at least 80%.<sup>35</sup>

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<sup>35</sup> Amazon also discusses in Section IV.B, below, measures designed to improve turnout even if the Regional Director orders a mail-ballot election.

3. A Mail-Ballot Election Would Unfairly Restrict Amazon’s Right to Communicate With Its Employees During the Election Period.

Should the Regional Director direct a mail-ballot election, that decision would exacerbate a restriction on Amazon’s free-speech rights and ability to communicate with its employees during what would likely be a *lengthy* mail-ballot period.

The United States Supreme Court has recognized “that an employer’s free speech right to communicate his views to his employees is firmly established and cannot be infringed by a union or the Board.” *NLRB v. Gissel Packing Co.*, 395 U.S. 575, 617 (1969); *see also Chamber of Commerce of U.S. v. Brown*, 554 U.S. 60, 67 (2008) (noting the Supreme Court’s recognition of “the First Amendment right of employers to engage in noncoercive speech about unionization” (citing *NLRB v. Va. Elec. & Power Co.*, 314 U.S. 469, 477 (1941) and *Thomas v. Collins*, 323 U.S. 516, 537–38 (1945))). Likewise, the Board has held that, “while [Section] 8(c) [of the Act] is not by its terms applicable to representation cases, ‘the strictures of the [First Amendment], to be sure, must be considered in all cases.’” *Allegheny Ludlum Corp.*, 333 NLRB 734, 737 n.20 (2001) (citing *Dal-Tex Optical Co.*, 137 NLRB 1782, 1787 n.11 (1962)).<sup>36</sup>

Despite these well-established principles, the Board in 2016 changed over 50 years of precedent by prohibiting employers and unions, in mail-ballot elections, from conducting “captive audience” meetings with employees within 24 hours of when the ballots are to be mailed by the Regional Office. *Guardsmark, LLC*, 363 NLRB No. 103, slip op. at 2–4 (2016) (purporting to align the prohibition on captive audience speeches in mail-ballot elections with that established for manual elections in *Peerless Plywood*); *see also Peerless Plywood*, 107

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<sup>36</sup> Section 8(c) provides as follows: “The expressing of any views, argument, or opinion, or the dissemination thereof, whether in written, printed, graphic, or visual form, shall not constitute or be evidence of an unfair labor practice under any of the provisions of this subchapter, if such expression contains no threat of reprisal or force or promise of benefit.” 29 U.S.C. § 158(c).



NLRB 427, 429 (1953) (prohibiting parties from holding mass captive-audience speeches within 24-hours of the start of a manual election). Previously, under *Oregon Washington Telephone Company*, parties could continue with captive audience meetings until “the time and date on which the ‘mail in’ ballots [were] scheduled to be dispatched by the Regional Office[.]” 123 NLRB 339, 341 (1959).

The massive size of the unit, the timing of the petition (filed during Amazon’s busiest season)—and the safety protocols that Amazon has implemented in response to the COVID-19 pandemic means that Amazon has had only a limited opportunity to date to communicate with its employees about the potential election. Now, because of the Board’s decision in *Guardsmark*, if the Regional Director proceeds with a mail-ballot election, Amazon would be prohibited from holding certain employee meetings any time within 24 hours of when the ballots are mailed until the ballots are counted.<sup>37</sup> See also *San Diego Gas & Elec.*, 325 NLRB at 1151–52 (Hurtgen & Brame, dissenting) (noting “that a mail ballot does not simply change the method of voting; rather, by extending the *Peerless Plywood* period, a mail ballot imposes a significant limitation on one party’s acknowledgeably effective means of communicating with the employees”); see also *Guardsmark, LLC*, 363 NLRB No. 103, slip op. at 7 n.18 (Miscimarra, dissenting) (observing that, “in a mail-ballot election, captive-audience-speech prohibition . . . continues for

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<sup>37</sup> Consistent with the robust safety protocols that Amazon has implemented to keep its employees safe, Amazon has severely limited holding in-person group stand-up meetings. These limitations also undermine the Board’s traditional justification for allowing unions to visit employees at their homes—i.e., because “[u]nlike employers, unions often do not have the opportunity to address employees in assembled or informal groups, and never have the position of control over tenure of employment and working conditions which imparts the coercive effect to systematic individual interviews conducted by employers,” see *Plant City Welding & Tank Co.*, 119 NLRB 131, 133–34 (1957), *rev’d on other grounds*, 133 NLRB 1092 (1961). The fact that Amazon now has a much more limited opportunity to address employees in assembled or informal groups further tilts the free-speech playing field in the Union’s direction.

considerably longer than the 24-hour prohibition period in advance of a manual election under *Peerless Plywood*").

Member Miscimarra's dissent is particularly poignant here, where the bargaining unit consists of nearly 6,200 employees—well above the number of an average Board-conducted election. 2014 Final Rule, 79 Fed. Reg. at 74,322 (“Most elections involve a small number of employees. . . . [T]hree-quarters of all Board elections have 60 or fewer employees in the unit.”). *This* case does not fall into the category of “most elections.” Rather, as of January 7, 2021, there are 6,190 potential voters—*more than 100 times* the average number of eligible voters in RC elections that took place in the 2020 fiscal year. *See* <https://www.nlr.gov/sites/default/files/attachments/pages/node-3617/total-closed-cases-fy-2020-pdf.pdf> (indicating that 51,127 employees were eligible to vote in 827 RC elections, an average of 61.82 eligible voters per election). Consequently, it will take significantly more time than it would take in an average election to engage employees and ensure that they make an informed choice as to whether they want union representation. *See* 2014 Final Rule, 79 Fed. Reg. at 74,438 (Miscimarra & Johnson, dissenting) (“Employers and unions have protected rights to engage in protected speech prior to an election. This right only has meaning if there is sufficient time for the parties to communicate with employees about the choice of representation.”).

4. *A Mail-Ballot Election Is Not Otherwise Justified By San Diego Gas & Electric.*

Traditionally, the Board has found that, when deciding whether to conduct a mail-ballot election, “the Regional Director should take into consideration at least the following situations that normally suggest the propriety of using mail ballots: (1) where eligible voters are ‘scattered’ because of their job duties over a wide geographic area; (2) where voters are ‘scattered’ in the

sense that their work schedules vary significantly, so that they are not present at a common location at common times; and (3) where there is a strike, a lockout or picketing in progress.” *San Diego Gas & Elec.*, 325 NLRB at 1145. In such situations, the Regional Director also should consider the desires of the parties, voters’ ability to understand mail ballots, and the efficient use of Board resources. *Id.* None of these situations is present here, nor does the Union argue otherwise. Amazon’s employees are not “scattered,” nor is there a strike, a lockout, or any picketing in progress. On the contrary, the employees are regularly reporting to work at a single facility, BHM1, which makes that an appropriate location to hold a manual election, and they share a broadly overlapping shift schedule. (See B. Ex. 3(a), Attachment 2)) And, Amazon’s proposed protocols maximize employees’ opportunity to vote—including by ensuring that all employees on all shifts have an opportunity to vote at *whatever time they choose*, whether before, during, or after their shifts—and will facilitate implementation of all necessary safety protocols, including outdoor social distancing.

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In sum, were the Regional Director to conclude that *Aspirus* provides her discretion to order a mail-ballot election, the Regional Director should still assess and counter-balance the purported and speculative “safety” justification for a mail election against the numerous grounds—rooted in longstanding Board and NLRA public policy—for selecting a manual election in this important case. Amazon respectfully submits that to do otherwise would be an abuse of discretion.

**C. If the Regional Director Has Questions or Concerns About Amazon’s Proposal, It Should Invite Further Discussion Before Ordering a Mail-Ballot Election.**

While Amazon submits that the foregoing considerations conclusively support a manual election, if the Regional Director still has doubts, *Aspirus* mandates that the Regional Director

seek input from Amazon:

If, notwithstanding the employer's stated willingness to abide by all protocols, the Regional Director deems the employer's initial submission to be lacking in sufficient specificity, *the Regional Director should offer the employer an opportunity to promptly cure any such defects*. Although Regional Directors are not required to engage in extensive discussions regarding, or any negotiations over, election arrangements, they should not reject manual-election proposals based solely on technical, superficial, or inadvertent noncompliance with the GC Memo 20-10 protocols when minimal additional communication could cure the noncompliance.

370 NLRB No. 45, slip op. at 7 n.33 (emphasis added). Under *Aspirus*, the Regional Director should not make a spot decision ordering that a mail-ballot election proceed without giving Amazon an opportunity to address the Regional Director's concerns.

**IV. A MAIL-BALLOT ELECTION, IF ORDERED, MUST COME WITH ADDITIONAL AND EXPRESS SAFEGUARDS.**

**A. Directing a Mail-Ballot Election Without Additional Measures and Protections Would Be an Abuse of the Regional Director's Discretion.**

For the reasons discussed in detail above, Amazon's unprecedented proposed safety measures and the Board's well-established preference for manual elections dictate that a manual election is appropriate here. Nevertheless, if the Region still decides to order a mail-ballot election in this case, it must respond to the undisputed reality that "mail ballot elections are more vulnerable to the destruction of laboratory conditions than are manual elections." *Thompson Roofing*, 291 NLRB at 743 n.1; *see also Brink's Armored Car*, 278 NLRB at 141 ("The danger that the laboratory conditions surrounding an election may be destroyed are greater in mail balloting situations than in manual elections.").

It does not take great imagination to conclude that fraud or coercion could easily extend beyond harvesting ballots. The circumstances surrounding the showing of interest in this proceeding further evince the opportunity for potential fraud. Instead of compiling signed authorization cards, the Union gathered electronic "signatures" through an electronic

authorization card platform that did not require individual authentication—meaning there was no way to ensure that each “signature” came from one associate. Further, when it became apparent that the bargaining unit total was not 1,500 associates but approximately 5,600 associates, the Union supposedly garnered a sufficient showing of interest—likely through this electronic platform—for a unit *three times the size of the petitioned-for unit*, in the span of less than two weeks. Under these circumstances, it cannot be said that concerns regarding potential fraud are irrational and, in fact, Amazon submits that those concerns are legitimate in the context of how this matter has evolved.

Examples of possible fraud or coercion include (1) intercepting ballots before they reach specific associates; (2) fraudulently completing ballots and forging signatures on the envelopes; (3) associates submitting multiple ballots; and (4) asking associates to complete mail ballots in the presence of a union official during a home visit. Such fraud or coercion could impermissibly alter the outcome of an election.

Indeed, the Board recently signaled its concern with possible fraudulent or coercive conduct in mail-ballot elections when it granted review in *Professional Transportation, Inc.*, Case 32- RC-259368, *supra*, on the issue of mail ballot solicitation. In its Request for Board Review of Decision and Certification of Representative, the employer in *Professional Transportation* argued that the Regional Director failed to find that the union engaged in objectionable solicitation when it repeatedly called, left voice mail messages, and/or sent text messages to employees asking if they had voted and if they needed help completing their ballots. The Board, in granting review, stated its intent to revisit current Board policy concerning mail-ballot solicitation.

Given the massive number of eligible voters involved here, the opportunity for fraud or coercion is almost unparalleled. That said, Amazon is committed to thwarting any possibility of objectionable conduct and safeguarding every associate's right to a full and fair opportunity to cast their vote, free of fraud or coercion. As such, Amazon proposes that the Region, should it order a mail-ballot election, adopt the following procedures for the election. While nowhere near the protections associated with an in-person manual election, these procedures may make a very bad election protocol at least somewhat better by ensuring that every eligible associate receives a mail ballot, can complete the ballot without fraud or coercion, and return the ballot in a timely fashion so that it can be counted by the Region.

**B. "Election Efficiency and Protection Proposal" in the Event the Regional Director Directs a Mail-Ballot Election.**

1. Steps to Promote Accurate Employee Addresses.

The unit at issue here is highly transitory and communicates primarily via electronic communication. As a result, Amazon has concerns that not all associates will receive ballots if they are mailed to the addresses on record. Amazon makes the following proposals to increase the likelihood that voters receive ballots.

- Amazon proposes that the parties agree to send out an official NLRB notice, via Amazon AtoZ (a general Amazon electronic communication platform), requesting that all associates update their mailing addresses by a certain date.
- Amazon proposes that it be permitted to supplement addresses to the Region and the Union on an ongoing basis when updates are received by Amazon.
- Amazon proposes that it be permitted to designate a centralized point of contact in Amazon Human Resources that can request that the Region send ballots to employees that did not receive ballots by a certain date, if those employees have informed Amazon Human Resources of the same.

In this regard, Amazon anticipates that the Notice of Election will state that employees are solely responsible for requesting that new ballots be sent to them if they are not received. However, Amazon requests that the parties agree that associates will be sent an AtoZ message asking whether they received their ballots

by a certain date (not if they are going to vote, or how they are going to vote, or if they need assistance with a ballot they did receive). For any associates that mark “no” Amazon will (1) contact the associate to confirm their address in the system is accurate; and (2) once the address is validated, Amazon will send a list of those associates with addresses to the Region for the Region to process duplicate ballots. Amazon will also provide the list of associates who did not receive their ballots to the Union.

## 2. Steps to Maximize Voter Participation.

Amazon proposes that the parties agree to specific procedures that will increase participation by associates. Amazon is open to consultation with the Region and Union to create additional opportunities for associates to participate in the vote.

- Amazon proposes that the NLRB install, with Amazon’s support, a mail-ballot drop box at BHM1.
  - The NLRB Regional Office would be the sole holder of the keys to the drop box.
  - A Board agent from the Birmingham office could visit BHM1 on a periodic basis to empty the ballots into a ballot box and seal it with the date collected written on the tape.
  - In addition to counting the number of ballots deposited, the Board agent would also register the date and all times the box was opened (if the Board has such an ability or technology). This information could be provided to the parties to demonstrate that only the NLRB agent opened the box and collected ballots.
  - The drop box would be clearly marked with the Notice of Election on official NLRB paper.
- As a further alternative, Amazon proposes that a Board agent from the Birmingham office come to the site and have a ballot box available for individuals to drop the ballots in person while the Board agent is watching from a distance.
  - The Board agent could remain in his or her vehicle and place the ballot box on a table outside his or her car window to observe.
    - Amazon could also arrange for the vehicle to park under a tent in case of inclement weather.
    - Amazon could arrange for a parking spot directly in front of the entrance where employees enter and exit.
    - Amazon could send a reminder notification to all eligible employees of the dates and times the Board agent will be there.
    - The Board agent could place a sign on the vehicle making it clear he or she is with the Board.

- The Board could schedule this process to occur several times over the course of the election period so that individuals could drop the ballots in the official NLRB box without having to worry about whether the ballot would be received and processed appropriately through USPS.
- As with the pick-up of ballots from the drop box, the Board agent could simply seal the box with tape and write the date the ballots were collected on the tape.

3. Automatic Voting Period Extensions Linked to Lower Participation Levels.

As noted above, the voter participation trends with mail-ballot elections are clear and, frankly, unacceptable to Amazon—as they should be for the Union and the Region. *See* Section III.B.2. The BHM1 employee population may not enthusiastically engage with mailings, either. Thus, if the Region directs a mail-ballot election, Amazon proposes that the parties stipulate now that if the voter response rates fail to meet specific thresholds by certain dates, that the parties will agree to an extension of the due date for ballots to be submitted. Amazon proposes the following thresholds:

Date	% of Votes Received	Action by Regional Director
Initial date ballots are due	Less than 85%	Extend period to receive ballots by 2 weeks
Extended due date	Less than 80%	Extend period to receive ballots by 10 days
Second extended due date	Less than 75%	Extend period to receive ballots by 7 days
Final Date Extension	Less than 70%	Final Extension – 5 days.

V. CONCLUSION

For the foregoing reasons, the Regional Director:

- should direct a manual ballot, in-person election in this matter under the protocols identified by Amazon and, failing that, in the alternative and over objection of Amazon,



- should direct a mixed-mail-manual election or mail-ballot election in this matter under the further alternative protocols identified by Amazon;
- should reconsider the earlier proffer ruling, and reverse it, and take Amazon's certifications as evidence;
- should deny the Union's motion to exclude the Certification of Dr. Ian Lipkin and failing that, in the alternative and over objection of Amazon,
  - should exclude the Declaration of Dr. Suzanne E. Judd; and
- should engage in any further consultations necessary with the parties if the Regional Director has questions or concerns about election procedures or their positions.

Dated: January 7, 2021

Respectfully submitted,

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### **CERTIFICATE OF SERVICE**

I certify that a true and correct copy of the Employer's Post-Hearing Brief was filed today, January 7, 2021, using the NLRB's e-Filing system and was served by email via secure file transfer upon the following:

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# **ATTACHMENT 1**

**UNITED STATES OF AMERICA  
BEFORE THE NATIONAL LABOR RELATIONS BOARD  
REGION 10**

**AMAZON.COM SERVICES LLC**

Employer,

and

**RETAIL, WHOLESALE AND  
DEPARTMENT STORE UNION**

Petitioner.

Case No. 10-RC-269250

**SUPPLEMENTAL CERTIFICATION OF MIKE STONE**

1           1.     I am the Director of Workplace Health and Safety (also known as "WHS")  
2     for Amazon.com Services LLC's ("Amazon's") Global Customer Fulfillment network,  
3     and I have served in this position since February 2020. I submit this Certification in  
4     further support of my December 28, 2020 Certification.

5           2.     As of the 14-day period ending January 7, 2021, there were approximately  
6     7,575 total Amazon employees and contingent workers at BHM1, of which 6190 are  
7     currently employed in job classifications included in the bargaining unit.

8           3.     Amazon conducts its own in-house COVID-19 testing through its "Project  
9     UV" at BHM1. We do not mandate testing, but we do encourage associates, including  
10    those who are asymptomatic, to get tested at least every two weeks by the onsite  
11    clinician. Amazon shares this testing data with the State of Alabama and it is included in  
12    the State's official positivity rate data. To Amazon's current knowledge, as of the 14-day  
13    period including today, 556 individuals were tested by Project UV with 24 reporting  
14    positive.

1           4.     Outside of Project UV, as of the 14-day period ending January 7, 2021,  
2     194 individuals that are active BHM1 employees reported to Amazon or BHM1  
3     leadership that they had tested positive with 126 confirmed cases (having laboratory  
4     documentation) and 68 presumptive cases (Antigen positive test or having a verbal or  
5     documented diagnosis from a health care provider). Combining the number of positive  
6     results through Project UV, with the employee self-reported confirmed positive and  
7     presumptive positive numbers for this time period, results in an overall positive case rate  
8     compared to the site population of 2.88%. Amazon does not keep track of all encounters  
9     between individuals at BHM1, nor does it track or keep a record of all COVID-19 tests  
10    taken by everyone in the facility outside of Project UV.

11           5.     This approach to positivity calculation is consistent with Approach 4 that  
12    is recommended by the Coronavirus Resource Center of the John Hopkins University.  
13    See <https://coronavirus.jhu.edu/testing/differences-in-positivity-rates>. We use the  
14    number of people who report positive tests and divide by the number of unique people at  
15    BHM1 over the last 14 days.

16           6.     The current positivity case rate compared to the site population at BHM1  
17    during the past 14 days has decreased as compared to the prior 14-day period. Amazon  
18    will supplement this initial submission and certify any changes after a manual election is  
19    directed, up to the day of the election itself.

I declare under penalty of perjury that the above is true and correct to the best of my knowledge, information, and belief.

Executed on: January 7, 2021

  
Mike Stone

# **ATTACHMENT 2**

**UNITED STATES OF AMERICA  
BEFORE THE NATIONAL LABOR RELATIONS BOARD  
REGION 10**

AMAZON.COM SERVICES LLC	)	
	)	
Employer,	)	
	)	
and	)	Case No. 10-RC-269250
	)	
RETAIL, WHOLESALE AND	)	
DEPARTMENT STORE UNION	)	
	)	
Petitioner.	)	
	)	

**EMPLOYER’S OFFER OF PROOF CONCERNING  
MANUAL ELECTION AT BHM1**

Pursuant to Section 102.66(c) of the National Labor Relations Board’s (“NLRB’s” or “Board’s”) Rules and Regulations and pursuant to the Hearing Officer’s directive, the Employer, Amazon.com Services LLC (“Amazon”), presents a summary of Amazon’s proposed protocols for the election in the above-captioned case, and an offer of proof (i.e. proffer).

Each protocol is supported by an offer of proof as presented in the attached declarations of (b) (6), (b) (7)(C), (b) (7)(A) Dr. Vin Gupta (Affiliate Assistant Professor, Pulmonary and Critical Care Physician), Dr. Ian Lipkin (Professor of Epidemiology and Director of the Center for Infection and Immunity), and Mike Stone, Director of WHS North America). Amazon remains open to additional direction and consultation from and with the Region, and it intends to fully comply with any directives from the Region regarding safety protocols for an in-person election. With an eye to ensuring a safe and fair election while maximizing the likelihood of voter turnout and ensuring employee free choice (which Amazon assumes both the Region and the



Petitioner desire), Amazon proposes the following protocols, which it believes comply with, and exceed, all recommendations in GC 20-10, *Aspirus*, and GC 21-01, and address the questions presented by the Hearing Officer on the final day of hearing, December 21, 2020.

Again, the below protocols are merely proposals that Amazon understands it is required to propose, in line with COVID-19 best practices and by leveraging our deep bench of scientists and health and safety experts, but Amazon is willing to work with the Region's requirements and is flexible to amendments that assure a safe and fair election is conducted.

### **Election Logistics for a Safe and Fair Manual Election**

Amazon proposes a single voting location – the parking lot adjacent to BHM1. Amazon proposes two (2) voting periods per day from 6:00AM to 11:00AM; break from 11:00AM to 12:30PM; and then open polls again from 1:00PM to 6:00PM for two to four consecutive days depending on how many Board agents will participate. Bailey Certification ¶ 58. Amazon proposes that the election would commence thirty days after the decision and direction of election in this matter. Amazon believes the periods will provide ample time for eligible voters to vote just before, or just after, their respective shifts. Amazon also consents to permit associates to self-release to vote throughout their shifts. Additionally, Amazon is open to other release protocols mentioned in the Hearing Officer's Manual, such as release by job classification. (b) (6), (b) (7)(C) Certification ¶ 74.

Amazon proposes to hold the election in a large tent in a parking lot adjacent to the Fulfillment Center. The tent is 120 feet long by 30 feet wide, and Amazon has the ability

to increase the width or length of the tent to meet the demands of the Region. (b) (6), (b) (7)(C),

Certification ¶ 55. Amazon can also open the sides as needed (see below).



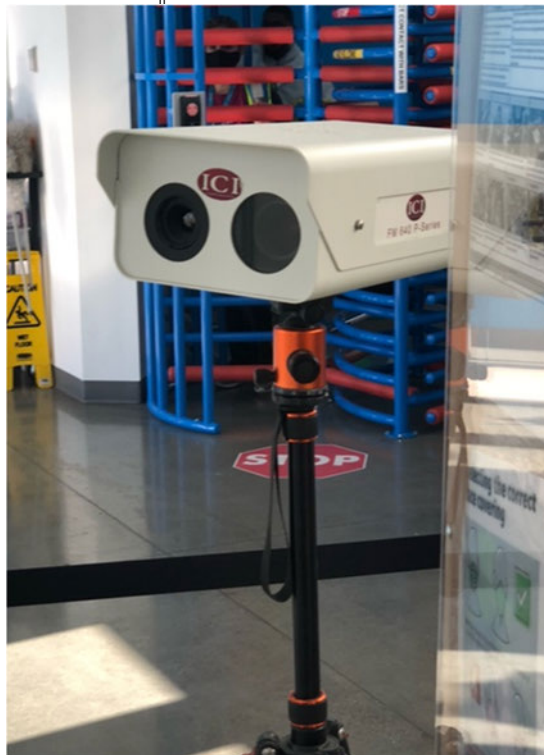
Additionally, the tent contains heating and lighting that will be running prior to, during, and after the election. (b) (6), (b) (7)(C), Certification ¶ 55. Additionally, should the Region prefer, the sides of the tent can be lifted completely or pulled back for air circulation.

(b) (6), (b) (7)(C), Certification ¶ 56. In addition, Amazon will provide six tent-covered lines leading up to each voting tent. (b) (6), (b) (7)(C), Certification ¶ 56.

Amazon proposes the following protocols:

- Amazon will provide the health certifications requested by the Board prior to and after the election. (b) (6), (b) (7)(C), Certification ¶ 80.
- Amazon will make its free COVID-19 testing available for Board agents and union observers. In addition, Amazon will make its free rapid COVID testing available for all employees, Board agents, and union observers on the day(s) of the election. (b) (6), (b) (7)(C), (b) (7)(D), Certification ¶ 54.
- Masks for the NLRB Board agents and observers, plus eye protection (or face shield if desired), gloves, and disinfecting wipes will be provided. (b) (6), (b) (7)(C), (b) (7)(D), Certification ¶ 68.

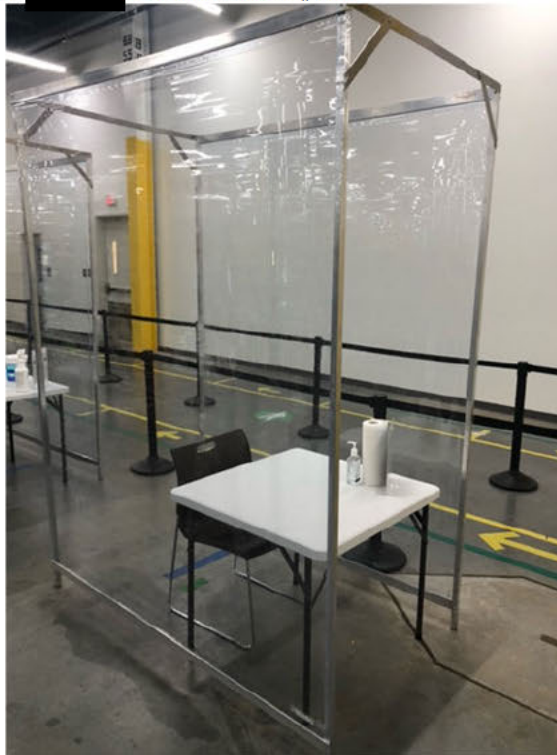
- Amazon will conduct Temperature Screening utilizing cutting edge Thermoscan technology for all who seek to enter the voting area on the day of the election. Anyone with a fever will be denied entry and referred for further screening and testing. (b) (6), (b) (7)(C), (b) Certification ¶ 65.



- All voters will change into fresh masks and gloves just prior to voting (reducing any concerns of the Board agents regarding cross-contamination). (b) (6), (b) (7)(C), (b) (7)(F) Certification ¶ 68.
- Each attendee will be provided a disposable pencil, and a trash can will be located directly outside the tent for associates to dispose of the pencil. (b) (6), (b) (7)(C), (b) (7)(F) Certification ¶ 68.
- Amazon will provide tape and/or glue to seal any challenged ballots. (b) (6), (b) (7)(C), (b) (7)(F) Certification ¶ 68.
- Hand Sanitizer will be available to the Board agents, observers, and all voters. (b) (6), (b) (7)(C), (b) (7)(F) Certification ¶ 68.
- Amazon will post signs in or immediately adjacent to the Notice of Election to notify voters, observers, party representatives, and other participants that, in accordance with CDC guidance, all voters, observers, party representatives, and other participants should wear CDC-conforming masks in all phases of the election,

- including the pre-election conference, in the polling area, or while observing the count. (b) (6), (b) (7)(C), (b) Certification ¶ 68.
- Amazon will provide heaters and fans in the voting areas for proper air circulation. (b) (6), (b) (7)(C), (b) Certification ¶ 68.
  - Amazon will arrange for restroom trailers for all Board agents and observers to use which will be sanitized multiple times per day and will allow Board agents and observers to remain outside the BHM1 building. (b) (6), (b) (7)(C), (b) Certification ¶ 68.
  - Amazon will place marks on the ground delineating six feet of distance to ensure proper social distancing. (b) (6), (b) (7)(C), (b) Certification ¶ 68.
  - Amazon proposes the use of its “Distance Assistant” social-distance tracking system in the line leading up to the voting areas which provides associates with live feedback on social distancing through a 50-inch monitor, a camera, and local commuting device. Our associates are already familiar with this and it has proven to be an effective coaching mechanism. These cameras do not record and no one would have access to the live feed. (b) (6), (b) (7)(C), (b) Certification ¶ 66.
  - Amazon will place marks on the ground to depict safe traffic flow. (b) (6), (b) (7)(C), (b) Certification ¶ 68.
  - Amazon is willing to arrange for food delivery services to be received at a separate tent near the voting area where the Board agents and observers could safely consume food and drink. (b) (6), (b) (7)(C), (b) Certification ¶ 69.
  - Each tent will have six to eight voting booths depending upon the Region’s preference. (b) (6), (b) (7)(C), (b) Certification ¶ 55.
  - Amazon proposes that three Board agents, one Amazon observer, and one Petitioner observer in a tent is sufficient but believes that each party should be able to change observers during the second polling period. Additionally, should the Region believe two observers are necessary from each party, as demonstrated on the schematic, there is more than enough room to do this safely. (b) (6), (b) (7)(C), (b) Certification ¶ 60.
  - Amazon proposes that each party be permitted to have an additional observer outside of the tented lines and voting areas to observe the entire process in action. (b) (6), (b) (7)(C), (b) Certification ¶ 61.
  - The tent will only contain the following:

1. The employer's observer and the union's observer will be seated more than 6 feet apart. (b) (6), (b) (7)(C), (b) Certification generally ¶ 68
2. Each observer will have:
  - a designated table,
  - a designated chair,
  - a designated voter list,
  - a designated pencil,
  - a mask,
  - a face shield, if requested,
  - hand sanitizer,
  - disinfectant wipes,
  - a standing desk, if desired, and
  - a designated walkie talkie where they can check in voters from that position. (b) (6), (b) (7)(C), (b) Certification generally ¶ 60-68.
3. Additionally, each observer area will be surrounded on three sides by a Plexiglas-type barrier with the back open to permit airflow. The below photo displays a sample of what the observer desk could look like if the Region approves, but it would include an additional cover on the front of the desk. (b) (6), (b) (7)(C), (b) Certification ¶ 63.



4. As noted, observers will have on protective goggles/face shield, masks, and gloves. (b) (6), (b) (7)(C), (b) Certification ¶ 68.

5. A space that is 6+ feet from the observers and the Board Agent will be marked for each voter to give their name to the observers. [REDACTED]  
Certification generally ¶ 68
6. The Board Agent will have a separate table spaced at least 6+ feet away from the observers where they can view the whole area and the process. [REDACTED]  
Certification generally ¶ 68.
7. The Board Agent will be provided with the same set up as the observers including: [REDACTED] Certification generally ¶ 60-68.
- a designated table,
  - a designated chair,
  - a designated voter list,
  - a designated pencil,
  - a mask,
  - a face shield if requested,
  - hand sanitizer,
  - disinfectant wipes,
  - a standing desk, if desired, and
  - a designated walkie talkie. [REDACTED] Certification ¶ 64.
8. Additionally, each Board agent will be surrounded on three sides by a Plexiglas barrier with the back side open to the outside of the tent. As noted, observers will have on protective goggles/face shield, masks, and gloves [REDACTED] Certification ¶ 63.
9. Amazon proposes to set up a pass-thru box similar to the below to permit the Board agent to pass ballots to voters like the below box: [REDACTED]  
Certification ¶ 59.





Additionally, Amazon could also arrange to have a vending-style distribution of ballots to be used by Board agents where by the Board agent passes the ballot to a voter under a slot in a Plexiglas screen utilizing a pair of sanitized tongs. (b) (6), (b) (7)(C), (b) (7)(A) Certification ¶ 59.



10. Voters will be admitted to the tent through the entrance located on one end of the tent, in a single file line, spaced more than 6 feet apart, with no more than 20 people total in the tent at any one time. (b) (6), (b) (7)(C), (b) (7)(A) Certification generally ¶ 68.

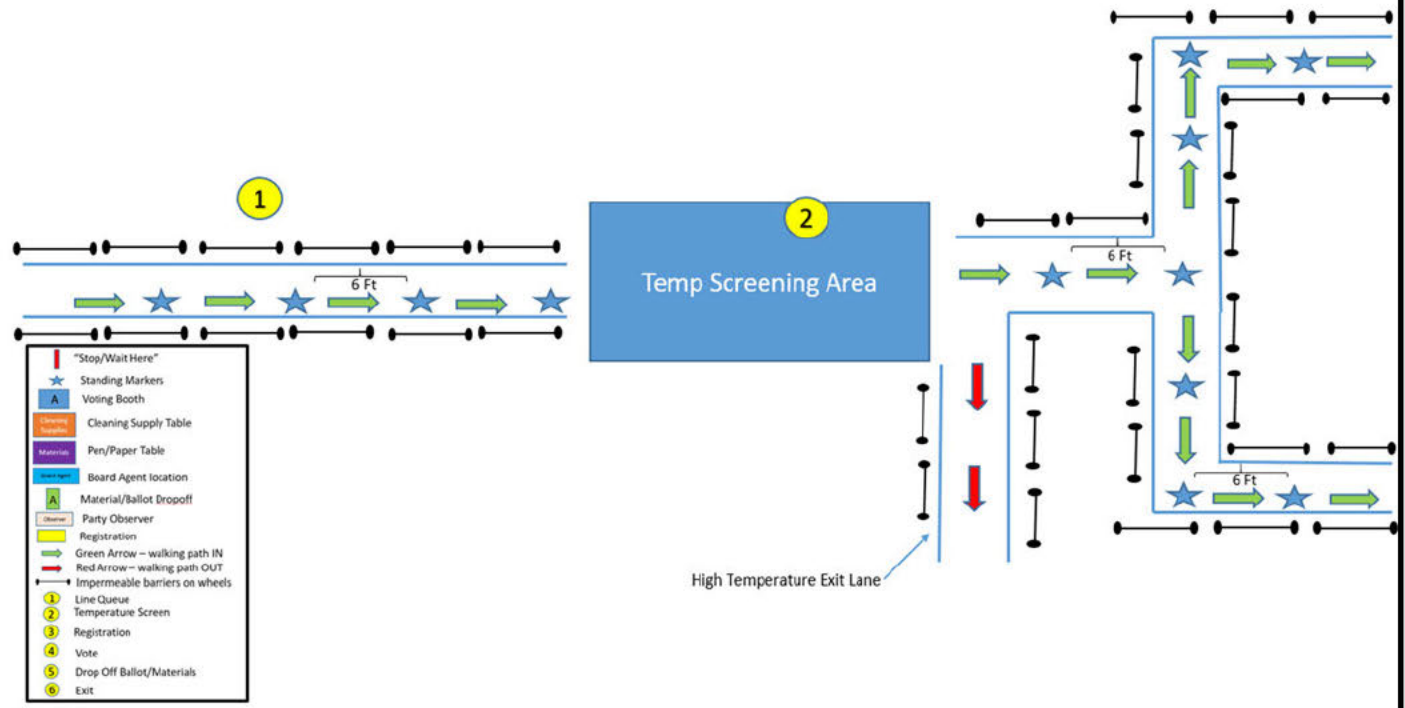
11. The voting booth will be set up 6+ feet from the Board agent, and 6+ feet from the observers. (b) (6), (b) (7)(C), (b) (7)(A) Certification generally ¶ 68.

12. After voting, the voter will deposit their ballot in the ballot box and proceed out through the exit on the opposite side of the tent (so there is no need for a voter to have to circle back past another voter).

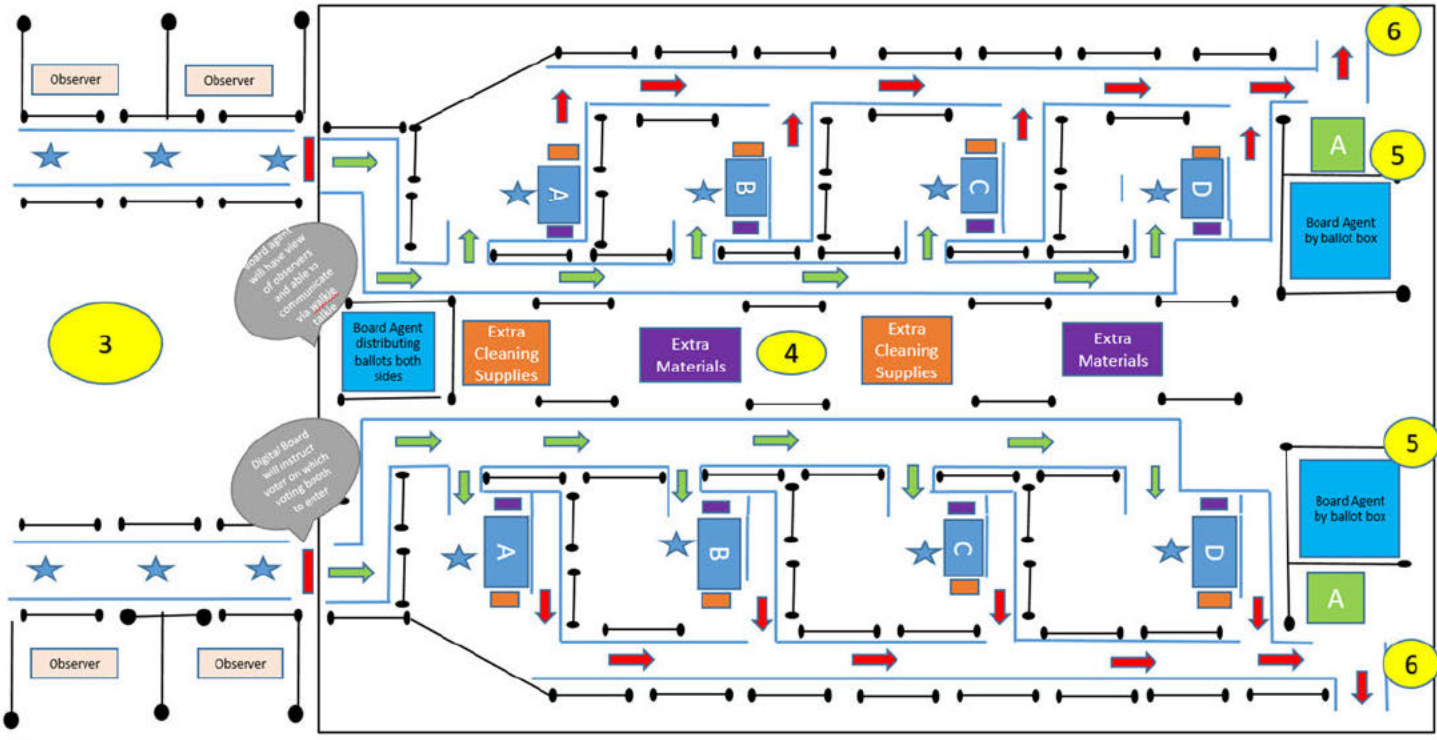
13. As a voter leaves through the exit, the line will advance by 1 person.

*See below schematic for demonstration of proposed tent set-up – full exhibits found in attachments to (b) (6), (b) (7)(C), (b) (7)(A) declaration.*

# Parking Lot → Temp Screening



# Voting Tent (Barriers Included)





- The Board agent will be further separated from the observers and voters by a Plexiglas shield. (b) (6), (b) (7)(C), (b) Certification ¶ 63.
- The Board agent's Plexiglas shield will include a pass-thru mechanism by which the Board agent can pass the ballot in a touchless manner. (b) (6), (b) (7)(C), (b) Certification ¶ 59.
- The voting tent will be thoroughly cleaned the evening before the vote using EPA approved disinfectant and ultraviolet technology. (b) (6), (b) (7)(C), (b) Certification generally ¶ 67.
- The tent will remain closed to access until 30 minutes prior to voting except for the videoconference demonstration of the voting area at least 24 hours prior to the vote. (b) (6), (b) (7)(C), (b) Certification generally ¶ 67.
- Amazon will tape off the floor in the tent and on the ground leading up to the tent to mark 6 ft. intervals and require voters and others to observe the appropriate distances. (b) (6), (b) (7)(C), (b) Certification generally ¶ 68.
- The tent will be cleaned between the first vote and second vote and each evening at the conclusion of the second voting period. (b) (6), (b) (7)(C), (b) Certification generally ¶ 67.
- Amazon will conduct a video conference at least 24 hours prior to the election so that the Board agent and parties can view the polling area. (b) (6), (b) (7)(C), (b) Certification generally ¶ 67.
- Amazon will post signs in or immediately adjacent to the Notice of Election, and the polling area, to notify voters, observers, party representatives and other participants of the requirement to wear CDC-conforming masks, eye protection, and gloves. (b) (6), (b) (7)(C), (b) Certification generally ¶ 68.

In order to limit the number of individuals in the tent during the ballot count, Amazon can arrange to have the vote count observed by Zoom, rather than in person, or the Agent could tape the box and transport it to their telework location or an NLRB office to conduct the count via Zoom. (b) (6), (b) (7)(C), (b) Certification generally ¶ 73. Alternatively, Amazon will agree to limit the employer and union representatives to 2 people each and space them 6+ feet apart from each other. Additionally, Amazon will agree to permit a union representative to serve as a "healthy check" observer and observe the process outside

the tent to ensure that all safety protocols are being followed. [REDACTED] Certification generally ¶ 73. Finally, Amazon proposes that, in the event the Region is not amenable to utilizing the digital assistant discussed above, several “Social Distancing Ambassadors” (non-managerial associates) observe the voting line to ensure all voters are following the appropriate social distancing guidelines.

### **COVID Certifications**

The Company is willing to provide the following certifications in writing 48 hours before, but no later than 24 hours before, the election:

- That the polling area is consistently cleaned in conformity with established CDC hygienic and safety standards
- How many individuals have been present in the facility within the preceding 14 days who:
  - i. Have tested positive for COVID-19 (or have been directed by a medical professional to proceed as if they have tested positive for COVID-19, despite not being tested)
  - ii. Are awaiting results of a COVID-19 test
  - iii. Are exhibiting symptoms of COVID-19, including a fever of 100.4 or higher, cough, or shortness of breath
  - iv. Have had direct contact with anyone in the previous 14 days who have tested positive for COVID-19 (or who is awaiting test results for COVID-19 or has been directed by a medical professional to proceed as if they have tested positive for COVID-19 despite not being tested).

The Company is willing to provide the following certifications for each party representative and observer participating at the pre-election conference, serving as an election observer, or participating in the ballot count:

- That they have not tested positive for COVID-19 (or been directed by a medical professional to proceed as if they have tested positive for COVID-19, despite not being tested) within the prior 14 days
- That they are not awaiting results of a COVID-19 test
- That they have not had direct contact with anyone in the previous 14 days who have tested positive for COVID-19 (or who is awaiting test results for COVID-19 or has been directed by a medical professional to proceed as if they have tested positive for COVID-19 despite not being tested)

The Company is willing to agree to notify the Regional Director in writing within 14 days after the day of the election if any individual who was present at the facility on the day of the election:

- Has tested positive for COVID-19 (or been directed by a medical professional to proceed as if they have tested positive for COVID-19, despite not being tested) within the prior 14 days
- is awaiting results of a COVID-19 test
- Is exhibiting symptoms of COVID-19, including a fever of 100.4 or higher, cough, shortness of breath
- Has had direct contact with anyone in the previous 14 days who have tested positive for COVID-19 (or who is awaiting test results for COVID-19 or has been directed by a medical professional to proceed as if they have tested positive for COVID-19 despite not being tested)

### **COVID in Alabama**

There are several sources relating to Alabama COVID statistics. Johns Hopkins maintains two websites. See <https://coronavirus.jhu.edu/region/us/alabama> and <https://bao.arcgis.com/covid-19/jhu/county/01073.html> (Jefferson County). Alabama itself maintains the following website:  
  
<https://alpublichealth.maps.arcgis.com/apps/opsdashboard/index.html#/6d2771faa9da4a2786a509d82c8cf0f7>.

As noted above, Amazon is taking extra steps in order to ensure the safety of the voters, observers, and Board agents during the process, making the statewide “baseline levels” for COVID less relevant or irrelevant.

### **COVID at BHM1**

As of the date of this proffer, Amazon can represent the following. Amazon conducts its own in-house testing through its “Project UV” at BHM1. To Amazon’s current knowledge, forty individuals were tested by Project UV and fall into the category of “individuals present in the facility within the preceding 14 days [who] have tested positive for COVID-19 (or are awaiting test results, are exhibiting characteristic symptoms, or have had contact with anyone who has tested positive in the previous 14 days).” Amazon will update this information in the future. (b) (6), (b) (7)(C) Certification ¶ 77.

### **Significant Issues with Mail Delivery in Alabama**

An in-person, manual election is the only way to secure employee free choice and a fair election, and honor the wishes of the majority of employees, given (1) the increasing potential for delay in mail delivery in the Birmingham area, (2) the Board’s stated preference for in-person elections generally, (3) the need for making the voting easily accessible, practical and ethical, and (4) the safety protocols Amazon has developed and proposed.

For example, it is unquestionable that mail service has been greatly impacted by the pandemic, and Alabama, and the Birmingham area, is no exception. Recently, Alabama.com posted an article entitled “Mail delays loom over Alabama right before Christmas: ‘significant and very bad’” detailing the severe mail delivery impacts in various

areas of Alabama. (See <https://www.al.com/news/2020/12/mail-delays-loom-over-alabama-right-before-christmas-significant-and-very-bad.html>, last visited 12/23/2020).

This comes after similar reports on December 7, 2020 and December 18, 2020. (See <https://www.wbrc.com/2020/12/07/birmingham-post-office-experiencing-delays-due-covid-/>, and <https://abc3340.com/news/coronavirus/covid-surge-causing-slow-down-in-usps-deliveries> last visited 12/23/2020).

### **Mail-In Issues**

In the event the Region should disagree with Amazon and order a mail-in election, Amazon intends to outline all the reasons a mail-in election without further protocols to ensure voter participation and combat fraud would be particularly inappropriate. By way of brief preview, the proposed bargaining unit is of an unprecedented size for a mail-in election, with an employee population that skews younger in age, is relatively transitory, and with whom Amazon does not communicate by mail but rather uses electronic communications channels; thus, there is a high likelihood, given the relatively transitory nature of the population at issue here, that Amazon may not have the current, accurate address of all eligible voters. The hiring and onboarding process too is accomplished through electronic means, resulting in a population for whom signatures for fraud-combatting purpose are not readily – if at all – available to Amazon, the union or the Region. Simply put, should the Region refuse an in-person election, despite Amazon’s detailed and diligent commitments regarding safety, and instead resort to mail-in voting, these issues must be addressed to ensure a fair, ethical and participatory election.

Amazon reserves *all rights*, after review of Petitioner's position to be submitted later this week advocating for a mail ballot, to respond in its Post Hearing Brief on Petitioner's suggested mail ballot arrangements. Amazon will discuss problems in such suggested arrangements, including but not limited to: (1) preference for manual ballots under Board law; (2) documented turnout and participation problems in recent mail ballots generally; (3) inherent unsuitability of mail ballots for large units especially with the demographics described; (4) mail ballot COVID insecurity issues; (5) potential problems for a mail ballot specific to BHM1 and postal delivery; (6) cost, logistics, and mixed manual/mail issues; and (7) the optimal mail election parameters if the RD chooses a mail ballot election. The foregoing is presented as a range of examples only. Amazon intends to take up these matters once it reviews Petitioner's position. *See* Hearing Tr. at 192 ("In terms of all arguments, we would reserve all of them for the post-hearing brief, and -- and that includes *Aspirus*-based arguments, general mail-versus-manual election arguments, and all of that. Just so the parties understand and the Hearing Officer understands, we're reserving all -- all of those arguments.").

### **CONCLUSION**

Amazon welcomes conversations with the Region and the Union to discuss the proposed protocols and any additional measures the parties desire that help ensure confidence in the safety and fairness of a vote procedure. Amazon's medical consultants have reviewed the proposed protocol and signed off on the protocols, as noted in the attached declarations.

For these reasons, the Employer respectfully requests that the Region grants its request for a manual election. Amazon is prepared to begin working with the Region, and the Union, immediately on protocols for the election.

Dated: December 28, 2020

Respectfully submitted,

/s/ Harry I. Johnson

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*Counsel for the Employer,  
Amazon.com Services LLC*

## **CERTIFICATE OF SERVICE**

I certify that a true and correct copy of the Employer's Offer of Proof Concerning Manual Election at BHM1 and supporting certifications and exhibits were filed today, December 28, 2020, using the NLRB's e-Filing system and was served by email via secure file transfer upon the following:

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Richard P. Rouco  
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/s/ Geoffrey J. Rosenthal  
Geoffrey J. Rosenthal



**UNITED STATES OF AMERICA  
BEFORE THE NATIONAL LABOR RELATIONS BOARD  
REGION 10**

**AMAZON.COM SERVICES LLC**

Employer,

and

**RETAIL, WHOLESALE AND  
DEPARTMENT STORE UNION**

Petitioner.

Case No. 10-RC-269250

**CERTIFICATION OF** (b) (6), (b) (7)(C), (b) (7)(A)

1. I am employed by Amazon.com Services LLC ("Amazon"). I am (b) (6), (b) (7)(C), (b) (7)(A)

(b) (6), (b) (7)(C), (b) (7)(A) at the BHM1 facility in Bessemer,

Alabama. (b) (6), (b) (7)(C), (b) (7)(A)

(b) (6), (b) (7)(C), (b) (7)(A)

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1           **A. Overview of Amazon’s COVID-19 Health and Safety Measures**

2           2.       During the COVID-19 pandemic, Amazon has implemented industry-  
3           leading health and safety measures to protect its associates as they provide essential  
4           services to our country. As explained in more detail below, these health and safety  
5           measures include, but are not limited to (i) enhanced cleaning and sanitization, (ii) daily  
6           temperature checks of all associates through contactless thermal temperature screening,  
7           (iii) provision of protective supplies (including medical masks), (iv) frequent hand  
8           washing, (v) installation of hand-sanitizing stations, (vi) significant structural and  
9           operational changes (including protective barriers and staggered shifts), (vii) quarantining  
10          and contact tracing procedures, (viii) digital and physical social distancing monitoring,  
11          (ix) free and voluntary COVID-19 tests, and (x) daily audits to ensure that these and other  
12          measures are being implemented. BHM1 has been at the forefront of these health and  
13          safety efforts domestically.

14          3.       In total, Amazon has made more than 100 changes to the operations and  
15          layout of BHM1 in order to protect associates. The company conducts daily audits of the  
16          health and safety measures that have been implemented.

17          4.       Amazon communicates new policies and process changes implemented in  
18          response to COVID-19 to BHM1’s associates through a variety of means, including text  
19          message updates, emails, posters, bulletin boards, and scrolling messages on TVs  
20          throughout the facility.

21          5.       Amazon’s WHS team at BHM1 has also conducted thousands of one-on-  
22          one engagements with associates about Amazon’s health and safety policies, such as  
23          reminding associates of Amazon’s policy requiring all associates to wear face masks or

1 face coverings, supporting and reminding associates about the importance of social  
2 distancing, and encouraging associates to clock in and out via Amazon's "A to Z" mobile  
3 application in order to minimize crowding at time clocks.

4 6. In addition, since mid-April, BHM1's (b) (6), (b) (7)(C), (b) (7)(A) has sent a weekly  
5 email, called (b) (6), (b) (7)(C), (b) (7)(A) to all BHM1 associates that provides updates about the site's  
6 health and safety efforts. Each weekly (b) (6), (b) (7)(C), (b) (7)(A) email describes specific safety actions  
7 that BHM1 has taken in the past week, provides COVID-19 safety tips and reminders,  
8 and shares success stories of associates and managers from the previous week.

9 **B. Enhanced Cleaning and Sanitization Measures at BHM1**

10 7. In response to the COVID-19 pandemic, Amazon began increased  
11 cleaning at all facilities, including BHM1 when it launched in March of 2020. These  
12 increased cleaning measures included regular sanitization of all door handles, handrails,  
13 lockers, and other "high touch" surfaces.

14 8. Our enhanced cleaning protocol added almost 200 additional points of  
15 contact that are now regularly sanitized and increased the frequency of cleanings per each  
16 ten-hour shift. For example, while under standard protocol, Amazon's cleaning teams  
17 cleaned the facility two times per shift, under the enhanced cleaning protocols, cleaning  
18 teams are now doing so eight times per shift.

19 9. Amazon has significantly increased the size of its cleaning team at BHM1  
20 in order to implement these enhanced cleaning protocols as the pandemic has progressed  
21 and we learned more.

22 10. BHM1 follows Amazon's procedures with respect to janitorial audits, as  
23 described in the Declaration of Stone. *See* Mike Stone Decl. ¶ 21. Amazon's WHS team

1 at BHM1 has conducted a minimum of one janitorial audit per shift since the building's  
2 launch in March 23, 2020.

3 11. In consultation with experts and in the interest of sparing no expense to  
4 keep people safe, Amazon has also adopted disinfectant spraying, which is a deep  
5 cleaning practice commonly used by hospitals and airlines. This disinfectant spraying  
6 process effectively coats the entire surface of the area being treated with disinfectant,  
7 including around any curves or bends in handles, and disinfects difficult-to-clean surfaces  
8 around the facility. Amazon's managers have verbally informed associates of the  
9 disinfectant spraying practice.

10 12. Amazon conducts daily disinfectant spraying throughout BHM1. An  
11 Amazon-approved third-party vendor applies the disinfectant spray to sanitize all areas of  
12 the facility (including stairways, breakrooms, and all associate workstations) and  
13 equipment (including totes, pallet jacks, and carts) every 24 hours.

14 13. In addition, Amazon's cleaning teams clean associates' workstations  
15 between shifts and during breaks. The cleaning teams empty the trash at each  
16 workstation and also dust and wipe clean the surfaces at the workstation.

17 14. Amazon also instructs all associates to clean and disinfect their  
18 workstations and tools at the beginning and end of shifts as well as ongoing, and provides  
19 them with appropriate cleaning supplies to do so.

20 15. Amazon has also installed over 100 "Sanitation Stations" that contain  
21 additional cleaning supplies, such as disinfecting wipes and bottles of disinfectant spray,  
22 throughout BHM1. The Sanitation Stations vary in size: there are both smaller Sanitation  
23 Stations, including, for example, containers of cleaning supplies attached to individual

1       workstations and larger Sanitation Stations that are six-foot tables stocked with cleaning  
2       supplies (including heavy-duty sanitizing wipes, bottles of disinfectant spray, and paper  
3       towels) for all associates to take. These larger Sanitation Stations are strategically  
4       located in central areas of BHM1 to ensure that associates can easily and quickly access  
5       the cleaning supplies they need while they are working, and associates are allowed to  
6       take as many disinfecting wipes and cleaning supplies as they need. In addition, BHM1  
7       has supplied 12 portable handwashing stations to supplement the 110 wash station  
8       available in the restrooms, for example see Exhibit 1.

9               16.     Amazon's procurement team conducts two "Sanitation Supply" audits per  
10       ten-hour shift to confirm that there are sufficient sanitation and cleaning supplies  
11       throughout the facility. Amazon's procurement team also does a daily count of the  
12       number of disinfecting wipes and other cleaning supplies at BHM1.

13              17.     Following confirmation that an associate at BHM1 was actually or  
14       presumptively diagnosed with COVID-19, Amazon determines when the diagnosed  
15       associate was last on site in order to determine whether additional, deep cleaning (beyond  
16       the now-standard enhanced cleaning protocols) is necessary.

17              18.     In making this determination, Amazon identifies where the diagnosed  
18       associate was in the building, for how long, how much time has passed since the  
19       associate was on site, and with whom the associate interacted, among other factors,  
20       including in some cases reviewing closed-circuit television monitoring video at BHM1.  
21       If the diagnosed associate informs Amazon of his or her diagnosis while on site, we shut  
22       down the associate's workstation and any adjacent work areas to undergo a deep

1 cleaning. The cleaning team performing this deep cleaning wears additional personal  
2 protective equipment (“PPE”).

3 **C. Amazon Conducts Daily Temperature Checks of All Associates at BHM1**

4 19. Amazon conducts daily on-site temperature checks at BHM1 to verify that  
5 associates do not have an elevated temperature when they arrive at the facility. Amazon  
6 uses contactless thermal cameras, and hand-held thermometers as a secondary screen, to  
7 check the temperature of all persons entering BHM1. Examples of the temperature  
8 screening process, see Exhibit 2.

9 20. BHM1 follows Amazon’s policies and procedures with respect to  
10 temperature checks, as described in the Declaration of Mike Stone. *See* Stone Decl.

11 ¶¶ 30.

12 21. Amazon has posted signs at the entrance of BHM1 explaining that  
13 temperature screening is required for anyone entering the building and that anyone who  
14 has an elevated temperature will be directed to return home. *See* Exhibit 3.

15 22. The temperature check program supplements Amazon’s other measures  
16 encouraging associates to stay home if they are feeling sick. For example, Amazon has  
17 posted signs near the employee badge scanners at the entrance of BHM1 directing  
18 associates to not enter the facility and to go home if they are experiencing upper  
19 respiratory or flu-like symptoms, including fever, cough, and shortness of breath.

20 **D. Amazon Provides Associates with Protective Supplies Necessary and**  
21 **Appropriate to Perform Their Work Safely**

22 23. Amazon also began distributing daily face masks to all associates at  
23 BHM1 in April, 2020.  
24

1           24.     Amazon has maintained a constant and abundant supply of face masks on  
2 site at BHM1 since that time.

3           25.     Amazon continues to make face masks available to all associates daily.  
4 Amazon currently distributes medical masks (which include instructions for use) to  
5 associates daily as needed.

6           26.     Although mask usage was initially encouraged on a voluntary basis,  
7 starting on April 15, 2020, Amazon has since required anyone entering BHM1 to wear a  
8 face mask or face covering at all times they are inside the facility. Amazon has posted  
9 signs throughout BHM1 reminding associates that approved face coverings are required.

10          27.     At BHM1, face masks or face coverings are required to be worn even  
11 when social distancing can, and is, being maintained.

12          28.     BHM1 follows Amazon's policies with regard to protective supplies and  
13 provides additional appropriate supplies depending on an associate's role and task, as  
14 described in the Declaration of Mike Stone. *See* Stone Decl. ¶ 39.

15       **E.     Amazon Instructs Associates to Clean Their Hands Frequently and Has**  
16       **Installed Hand-Sanitizing Stations Throughout BHM1**

17           29.     Amazon instructs all associates at BHM1 to clean their hands frequently,  
18 especially after going to the bathroom, before eating, and after blowing their nose,  
19 coughing, or sneezing. We have posted signs throughout BHM1 encouraging all  
20 associates to wash their hands with soap and water for at least twenty seconds, and if  
21 soap and water is not readily available, to use hand sanitizer with at least 60% alcohol  
22 content.  
23

24          30.     As of March 22, 2020, Amazon extended regular break times from 15  
25 minutes to 20 minutes in order to ensure associates have sufficient time to wash their

1 hands and to clean their workstations; associates have two regular breaks per shift in  
2 addition to a 30-minute lunch break. Additionally, at any time an associate could take  
3 additional time to go wash their hands or sanitize their workstation while onsite if they  
4 felt it was necessary.

5 31. There are 34 bathrooms at BHM1, and Amazon has installed over 35  
6 hand-sanitizing stations along with 12 portable handwashing stations throughout BHM1  
7 to ensure that associates can quickly and efficiently clean their hands. *See Exhibit 1.*

8 32. The dispersed locations of the bathrooms and hand-sanitizing stations  
9 ensure that associates are able to quickly and efficiently clean their hands during their  
10 shifts.

11 33. Amazon has an ample supply of hand sanitizer at BHM1.

12 34. Amazon refills the hand-sanitizing stations at BHM1 on a regular basis.  
13 During each Sanitation Supply audit, the procurement team checks all of the hand-  
14 sanitizing dispensers in the facility and if any dispensers are running low or are empty,  
15 the procurement team arranges for those dispensers to be promptly refilled.

16 **F. Amazon Entirely Reconfigured BHM1 to Allow for Appropriate Social**  
17 **Distancing**  
18

19 35. Amazon has made significant structural and operational changes at BHM1  
20 in order to facilitate social distancing between and among our associates to help prevent  
21 the spread of COVID-19.

22 36. For example, BHM1 has added protective barriers in line with CDC  
23 guidance to separate workstations that do not meet social distancing guidelines, added 8  
24 satellite breakrooms in addition to the permanent break areas, removed breakroom  
25 furniture to ensure that all seats are six feet apart along with separating microwaves to



1 meet social distancing guidelines, relocated chairs and tables so no more than two people  
2 could sit at any single six-foot breakroom table, developed technology for associates to  
3 clock in and out via the “A to Z” mobile application on their phone in order to prevent  
4 queuing at time clocks, and converted certain areas of BHM1 into one-way walking paths  
5 to reduce crowding, among other measures. For example, see Exhibit 4.

6 37. In addition, Amazon has taken steps to reduce the number of touchpoints  
7 for associates in BHM1. For example, Amazon has used door stops to keep doors inside  
8 BHM1 open so that associates do not have to touch the door handles to open and close  
9 the doors.

10 38. Amazon also significantly modified daily operations for BHM1’s  
11 thousands of associates in order to reduce crowding and enable associates to maintain  
12 appropriate social distancing.

13 39. For example, Amazon has staggered the start times of associates’ shifts by  
14 15-minute intervals in order to reduce the number of associates entering the facility at the  
15 same time. Amazon also staggered break times in order to reduce crowding in  
16 breakrooms and other areas.

17 40. Amazon has also limited onboarding of new associates to 50 associates at  
18 a time, conducts trainings using Kindles and other virtual means, and indefinitely  
19 cancelled all large events, gatherings, or trainings at BHM1. In addition, Amazon closed  
20 BHM1 to the public.

21 41. Prior to the COVID-19 health crisis, supervisors typically held daily  
22 stand-up meetings with associates to address safety tips, success stories, and other  
23 information. Amazon has now eliminated all in-person stand-up meetings and replaced

1 these meetings with other methods of communication, such as mobile applications,  
2 broadcasts to associate workstations, and emails.

3 42. Amazon has also significantly modified the operations of the emergency  
4 clinic at BHM1, named the “Wellness Center” or “AmCare,” which has onsite medical  
5 representatives who are certified Emergency Medical Technicians and administer first aid  
6 to associates. Since March, 2020, Amazon has instructed all associates not to enter the  
7 Wellness Center if they are experiencing upper respiratory and/or flu-like symptoms,  
8 including fever, cough, and shortness of breath. We instruct associates experiencing  
9 upper respiratory or flu-like symptoms to instead seek care from their personal healthcare  
10 provider. On or about April 14, 2020, the physical space of the Wellness Center clinic at  
11 BHM1 closed for associates and transitioned to operating in a mobile capacity. The  
12 onsite medical representatives are notified by radio of any associate needing support and  
13 can administer first aid at an associate’s work location if needed. We posted signs on the  
14 entrance to the Wellness Center informing associates that Wellness Center is closed and  
15 that safety team can provide mobile assistance if needed.

16 43. In addition, we have designated eleven associates per shift along with  
17 dedicated leadership at BHM1—known as the social-distancing team—to serve as site  
18 leaders to promote social distancing and act as coaches throughout the facility.

19 44. Amazon has also developed tools that use augmented reality technology to  
20 display associates relative distance to one another. This technology, called a “Digital  
21 Assistant,” uses a TV screen with a mounted camera to show and alert associates when  
22 they are not meeting social distancing requirements so that they can distance themselves.  
23 We have placed these portable stations in high traffic areas to bolster other controls that

1 are in place. BHM1 has deployed seven of the Digital Assistants to the most high traffic  
2 areas. For example, see Exhibit 5.

3 **G. In Order to Protect the Health of Our Associates, Amazon Imposes a**  
4 **Quarantine Procedure and Conducts Contact Tracing Following a Positive**  
5 **COVID-19 Diagnosis**  
6 

---

7 45. Amazon instructs all associates feeling sick to stay home, self-monitor,  
8 seek assistance from a medical care provider, and report any symptoms or diagnosis to  
9 appropriate leadership. For example of relevant signage, see Exhibit 6.

10 46. BHM1 follows Amazon's policies with respect to paid time off for  
11 associates diagnosed with COVID-19 and the criteria for determining when a diagnosed  
12 associate can return to work, as described in the Declaration of Mike Stone. *See* Stone  
13 Decl. ¶ 60.

14 47. Further, in accordance with Amazon's policies, as described in the  
15 Declaration Mike Stone, all associates at BHM1 are notified about confirmed positive  
16 diagnoses of individuals who work at BHM1. *See* Stone Decl. ¶ 60.

17 48. BHM1 also follows Amazon's policies and procedures with respect to  
18 conducting "contact tracing" and placing individuals identified through contact tracing on  
19 paid quarantine leave, as described in the Declaration of Mike Stone. *See* Stone Decl. ¶¶  
20 62–63. This contract tracing is conducted to identify associates who were in close  
21 contact with the diagnosed associate on site and is supplemented in some cases by review  
22 of closed-circuit television monitoring video at BHM1. *See* Exhibit 5.

23 49. In addition, Amazon proactively reaches out to local health authorities  
24 with updates, including to advise local health authorities of confirmed COVID-19 cases  
25 at BHM1.

1       **H.       Amazon Supports Two-Way Feedback on Our Health and Safety Measures**

2               50.       We welcome associate feedback, and have consistently encouraged our  
3       associates to raise any concerns about health and safety and to report non-compliance  
4       with Amazon’s policies. Associates can voice any concerns they may have directly to  
5       their managers, Human Resources, and an ethics complaint hotline, among other forums.

6               51.       For example, associates can use the Voice of the Associate (“VOA”)  
7       virtual whiteboard to ask questions, express concerns, or make complaints directly to the  
8       facility’s leadership. Throughout the COVID-19 health crisis, associates at BHM1 have  
9       taken advantage of the VOA to voice their complaints.

10              52.       In addition, since the last week of March 2020, we have conducted a daily  
11       opinion survey, called “Connections,” to seek feedback from BHM1 associates. The  
12       survey asks associates to share whether they have been able to maintain at least six feet of  
13       distance from others, have sufficient supplies to sanitize their workstations, and have  
14       observed crowding in breakrooms.

15              53.       Amazon’s WHS team at BHM1 also seeks feedback through one-on-one  
16       engagements with associates. Each week, we focus our engagements on a different  
17       health and safety topic, and the WHS team members speak with different associates  
18       working on the floor about that topic over the course of the week. For example, we  
19       sought feedback during one particular week about whether associates had observed  
20       crowding during breaks and shift changes.

21  
22  
23       **I.       Proposed Mechanics for BHM1 Manual Election**

1           54.     Amazon provides below its proposal for a manual election at BHM1,  
2           which will incorporate its now well-established health and safety measures at BHM1.  
3           What Amazon proposes below is what Amazon will do, *at a minimum*, to ensure a safe  
4           manual election process. Amazon is ready and willing to go beyond the below proposals  
5           at the Board's request in the interests of proving a safe voting process that will  
6           enfranchise the entire voting population while also keeping Board agents and union  
7           observers safe from any increased risk of exposure to the COVID-19 virus. In addition to  
8           the below details, Amazon will make its free rapid COVID testing available for all  
9           employees, Board agents, union observers.

10          55.     The vote for the manual election would occur outside of BHM1 in two  
11          separate tented areas, each 120 feet by 30 feet in size, with at least ten feet in between  
12          each tented area. Pictures of the proposed tents are attached as Exhibit 7. Each tent will  
13          have six voting booths (each with a ballot box), and separate lines for each voting booth  
14          to both enter and exit the process. *See* Exhibit 8. Amazon will have the sides of the tents  
15          rolled up to ensure appropriate air circulation or, if the Board prefers, the sides will be  
16          rolled down leaving a 1-2 inch gap (or more if the Board desires) at the bottom to ensure  
17          sufficient air circulation. Each tent will have heating and lighting. The tents would be  
18          arranged so that voters would enter and exit the voting lines in different locations. *See*  
19          Exhibit 9.

20          56.     In addition, Amazon will provide six tent-covered lines leading up to each  
21          voting booth at each voting tent.

22          57.     Amazon has prepared a detailed schematic of the election setup for the  
23          Board's review. *See* Exhibit 9. Amazon is willing to be flexible with respect to this

1 setup and will make revisions to meet any concerns that the Board may have. In addition,  
2 Amazon is willing to listen and, if possible, address any legitimate concerns about safety  
3 raised by the Petitioner union.

4 58. Amazon proposes that the voting areas be open for 2 to 4 days with the  
5 following schedule (subject to change based on the Board's input): 6:00AM to  
6 11:00AM; break from 11:00AM to 12:30PM; and then open polls again from 1:00PM to  
7 6:00PM. The voting areas would be sanitized during the break and again at the end of the  
8 day. The break area, discussed in more detail below, would be sanitized at the end of  
9 each day. This proposal would limit the amount of hours Board agents must be present at  
10 the voting place. Amazon believes that there can be approximately 300 votes per hour  
11 given that there will be 12 total voting booths (six in each tent). For a voting population  
12 of 5,800, that would equate to 19.3 total voting hours. To limit the number of Board  
13 agents and union observers required to be present (and/or travel to the area), voting can  
14 be reduced to one tent instead of two.

15 59. As an additional safety measure, Amazon will provide a double-door, or  
16 pass thru, box in which a ballot is placed in on one side and the voter opens the door on  
17 the other side and takes the ballot out. Alternatively, if the Board prefers, Amazon is  
18 willing to establish a vending machine style distribution for ballots to be used by Board  
19 agents, as demonstrated more generally in Exhibit 10.

20 60. Amazon proposes that there be three Board agents in each tent, one  
21 Amazon observer in each tent, and one Petitioner observer in each tent. Amazon believes  
22 that one observer per party in each tent is sufficient, but believes that each party should  
23 be able to change the observers in the tents during the second polling period.

1           61.     Amazon also proposes that Petitioner be permitted to have one other  
2 observer outside of the tents to ensure COVID-19 protocols are followed outside of the  
3 tented voting areas, such a proper social distancing, and to observe the thermal imaging  
4 process described below. Amazon proposes that no election zone observer be permitted  
5 to electioneer.

6           62.     Because of the length of time that the observers and board agents will be  
7 sitting, the Company can provide a standing desk mechanism as well based on preference  
8 of the parties. These same accommodations will be made available in appropriately  
9 distanced and plexi-glassed workstations inside the food/beverage tent discussed below.  
10 For example, see Exhibit 11.

11          63.     Amazon will provide Plexiglass shields for Board agents (or others) to  
12 stand behind to observe the voting booths.

13          64.     Amazon will provide walkie talkies through which Board agents and  
14 observers can communicate. That way, Board agents and observers can maintain social  
15 distancing and still communicate as necessary. Amazon proposes that it is appropriate  
16 for each observer to have a personal voter list to check off, but suggests the use of walkie  
17 talkies to confirm/challenge voters.

18          65.     At each entrance to each tent, Amazon will duplicate its use of thermal  
19 imaging devices for temperature checks. Amazon successfully uses these thermal  
20 imaging devices for its daily on-site temperature checks at BHM1 to verify that  
21 associates do not have an elevated temperature when they arrive at the facility. Pictures  
22 demonstrating the technology are included in Exhibit 12.

1           66.     Amazon will implement proven technology (already in use at BHM1) to  
2     ensure social distancing. *See* [https://www.aboutamazon.com/news/operations/amazon-](https://www.aboutamazon.com/news/operations/amazon-introduces-distance-assistant)  
3     introduces-distance-assistant. This technology, called a “Distance Assistant,” uses a  
4     large television screen with a mounted sensor to determine six feet of distancing. On the  
5     television, in real-time, the Distance Assistant displays a virtual circle on the ground  
6     around each individual within its range: green circles showing appropriate distancing,  
7     red circles indicate that individuals are too close together (*i.e.*, within six feet). *See*  
8     Exhibit 13, which provides an example of what the displayed circle looks like. During  
9     use inside the Fulfillment Center, Social Distancing Associates monitor laptops tuned to  
10    the Distance Assistant feed and will verbally advise associates when they are outside of  
11    social distancing standards so that they can be corrected. There is no recording of images  
12    and the sole purpose is to track distance between the “circles” – actual marking of ballots  
13    would not be monitored. If the Board desires, Amazon is willing to make Social  
14    Distancing Associates available during the election process to assist with monitoring the  
15    Distance Assistant, otherwise the Distance Assistant can be utilized in a self-correcting  
16    manner – *e.g.*, individuals can monitor their own distancing by viewing the large-screen  
17    televisions. *See* Exhibit 14.

18           67.     Amazon will use a highly qualified and approved third-party cleaning  
19    company to extensively clean and sanitize the tents and all hard surfaces in the voting  
20    areas before voting and in between voting cohorts or blocs, including through application  
21    of ultraviolet light (UV) treatment—consistent with established CDC hygienic and safety  
22    standards. Amazon will conduct a video conference at least 24 hours prior to the election



1 so that the Board Agent and parties can view the polling area and the tent(s) will remain  
2 closed to access until 30 minutes prior to voting except for the videoconference.

3 68. Amazon will also provide the following:

- 4 a. Masks, face shields, gloves, and sanitary wipes for Board agents,  
5 observers, and voters. All voters will change into fresh masks and  
6 gloves just prior to voting;
- 7 b. Multiple hand sanitizer stations inside each tent (for example, see  
8 Exhibit 15);
- 9 c. Multiple hand sanitizer stations outside the entrance to each tent;
- 10 d. Signs in the voting areas to notify all individuals that, in accordance  
11 with CDC guidance, all individuals must wear CDC-conforming  
12 masks in all phases of the election and maintain six feet of distance;
- 13 e. Disposable pencils without erasers for voters;
- 14 f. Glue sticks and tape for Board agents to use to seal challenge ballot  
15 envelopes;
- 16 g. Mechanical grabbers for the Board agents to use so they do not have to  
17 touch ballot envelopes with their hands;
- 18 h. Heaters and fans in the voting areas to ensure comfort and proper air  
19 circulation;
- 20 i. Restroom trailers for all Board agents and observers, which will be  
21 sanitized multiple times per day and will allow Board agents and  
22 observers to remain outside of the Fulfillment Center;

- j. Marks on the ground delineating six feet of distance to ensure separation between Board agents, observers, and voters; and
- k. Marks on the ground depicting safe traffic flow throughout the polling areas (for example, see Exhibit 16).

69. Amazon is willing to arrange for food delivery to the voting area and, if desired, a separate tented area for the safe consumption of food and drink by the Board agents and observers, with all of the foregoing safety protocols that will be applied to the voting areas. Amazon will provide free wifi access to both the voting areas and the food/beverage tent. Tables in the food/beverage tent will be spaced more than six feet apart and will have appropriately distanced individual seating established with plexiglass barriers. Stand-up desks will also be made available.

70. In the event that the Regional Director determines that it is necessary for Board agents from other field offices in Region 10 to assist in the election, and the Regional Director determines that the Board agents require ground transportation other than their personal vehicles to travel to the site, Amazon is willing to arrange for transportation of Board agents from Atlanta or elsewhere to/from Bessemer for the election. Amazon is prepared to obtain the buses/vans (whichever is required based on the number of Board agents as determined by the Board) prior to the required date and will have them fully and routinely sanitized by a highly qualified outside cleaning company and will keep the vehicles and drivers guaranteed throughout the voting process. Amazon will ensure proper social distancing on the buses or vans and, if necessary, will have Plexiglass barriers installed. Amazon will agree to permit one union observer to travel on each these buses/vans, if the union so desires.

1           71.     If Board agents must come in from out of town and stay at local  
2 hotel/motels or Airbnb locations, Amazon is willing to arrange for extra sanitation steps  
3 to take place in these rooms/locations, to be performed by a highly qualified outside  
4 cleaning company – no company representatives or employees will be involved in this  
5 process and, to eliminate any concerns the union may have regarding these basic safety  
6 measures, Amazon will permit union observers to watch these sanitation steps if they so  
7 choose (subject to appropriate social distancing and mask wearing). If logistically easier  
8 and acceptable to the Board and union, Amazon is willing to arrange for accommodations  
9 for the Board agents, such as an entire floor or wing of a local hotel/motel to ensure that  
10 Board agents are able to minimize contact with individuals outside of the voting process.  
11 To alleviate any concerns the union may have, Amazon would not have representatives or  
12 employees at these locations or involved in any process related thereto after the initial  
13 set-up, which will occur before any Board agent arrives on location. Consistent with the  
14 transportation described above, Amazon can make the same arrangements available for  
15 transportation to/from the accommodations to the voting area for both the Board agents  
16 who do not have their own personal vehicles.

17           72.     If, to avoid contact with individuals outside the voting process once they  
18 have arrived on location, Board agents wish to stay on site in recreational vehicles (RVs)  
19 during the course of the election, Amazon also can arrange for such accommodations to  
20 be made available and will hire a highly qualified outside cleaning company to fully  
21 sanitize them multiple times throughout the election. No Amazon representatives or  
22 employees will be involved in this process once the accommodations are established on  
23 site, which will occur before the election process begins and Board agents arrive. If the

1 union is unable or unwilling to offer comparable accommodations to its observers,  
2 Amazon would be willing to make the same accommodations available to them.

3 73. Amazon will arrange for the pre-election conference and post-election  
4 count to take place under a tent at BMH1, subject to all of the safety protocols discussed  
5 above (or at the Regional Office or another location of the Board's choosing) and is  
6 willing to provide the proper equipment so that the count may be streamed via Zoom so  
7 that members of the public could easily attend. Alternatively, Amazon is amenable to  
8 the count being conducted via videoconference at the Birmingham or Atlanta regional  
9 office(s) at a later date to be determined by the Regional Director. Amazon proposes that  
10 two representatives from each party attend the pre-election conference and post-election  
11 count.

12 74. Amazon does not believe a voter release schedule is necessary, and  
13 believes associates will have more than enough time to vote prior to or after their shifts.  
14 If, for some reason, a voter cannot vote before or after their shift, Amazon will permit  
15 them time do so while on shift.

16 75. While the Fulfillment Center has proven to be a safe place to work, under  
17 Amazon's proposal set forth above, a Board agent or observer will never need to enter the  
18 Fulfillment Center.

19 **J. COVID-19 Testing at BHM1**

20 76. Amazon regularly conducts COVID-19 testing at BHM1. We do not  
21 mandate testing, but we do encourage associates, including those who are asymptomatic,  
22 to get tested at least every two weeks by the onsite clinician. Many associates take  
23 advantage of this free onsite testing and receive results within a few days of a test.

1           77. Amazon conducts its own in-house testing through its “Project UV” at  
2 BHM1. To Amazon’s current knowledge, forty individuals were tested by Project UV  
3 and fall into the category of “individuals present in the facility within the preceding 14  
4 days [who] have tested positive for COVID-19 (or are awaiting test results, are exhibiting  
5 characteristic symptoms, or have had contact with anyone who has tested positive in the  
6 previous 14 days).” Amazon will update this information in the future.

7           **K. Agreement to Provide Future COVID-19 Related Information**

8           78. Amazon will provide certifications in writing 48 hours before but no later  
9 than 24 hours before the election:

- 10           a. That the polling area is consistently cleaned in conformity with established CDC  
11           hygienic and safety standards.
- 12           b. How many individuals have been present in the facility within the preceding 14  
13           days who:
- 14                   i. have tested positive for COVID-19 (or have been directed by a medical  
15                   professional to proceed as if they have tested positive for COVID-19,  
16                   despite not being tested);
- 17                   ii. are awaiting results of a COVID-19 test;
- 18                   iii. are exhibiting symptoms of COVID-19, including a fever of 100.4 or  
19                   higher, cough, or shortness of breath;
- 20                   iv. have had direct contact with anyone in the previous 14 days who have  
21                   tested positive for COVID-19 (or who is awaiting test results for COVID-  
22                   19 or has been directed by a medical professional to proceed as if they  
23                   have tested positive for COVID-19 despite not being tested).

1           79.     Amazon will provide the following certifications for each of its  
2 representatives and observers participating at the pre-election conference, serving as an  
3 election observer, or participating in the ballot count:

- 4           a.    that they have not tested positive for COVID-19 (or been directed by a medical  
5                professional to proceed as if they have tested positive for COVID-19, despite not  
6                being tested) within the prior 14 days;
- 7           b.    that they are not awaiting results of a COVID-19 test;
- 8           c.    that they have not had direct contact with anyone in the previous 14 days who  
9                have tested positive for COVID-19 (or who is awaiting test results for COVID-19  
10              or has been directed by a medical professional to proceed as if they have tested  
11              positive for COVID-19 despite not being tested);

12           80.     Amazon agrees to notify the Regional Director in writing within 14 days  
13 after the day of the election if any individual who was present at the facility on the day of  
14 the election:

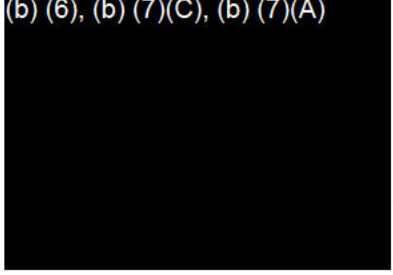
- 15           a.    has tested positive for COVID-19 (or been directed by a medical professional to  
16                proceed as if they have tested positive for COVID-19, despite not being tested)  
17                within the prior 14 days;
- 18           b.    is awaiting results of a COVID-19 test;
- 19           c.    is exhibiting symptoms of COVID-19, including a fever of 100.4 or higher,  
20                cough, shortness of breath;
- 21           d.    has had direct contact with anyone in the previous 14 days who have tested  
22                positive for COVID-19 (or who is awaiting test results for COVID-19 or has been

1 directed by a medical professional to proceed as if they have tested positive for  
2 COVID-19 despite not being tested).

I declare under penalty of perjury that the above is true and correct to the best of my  
knowledge, information, and belief.

Executed on: December 28, 2020

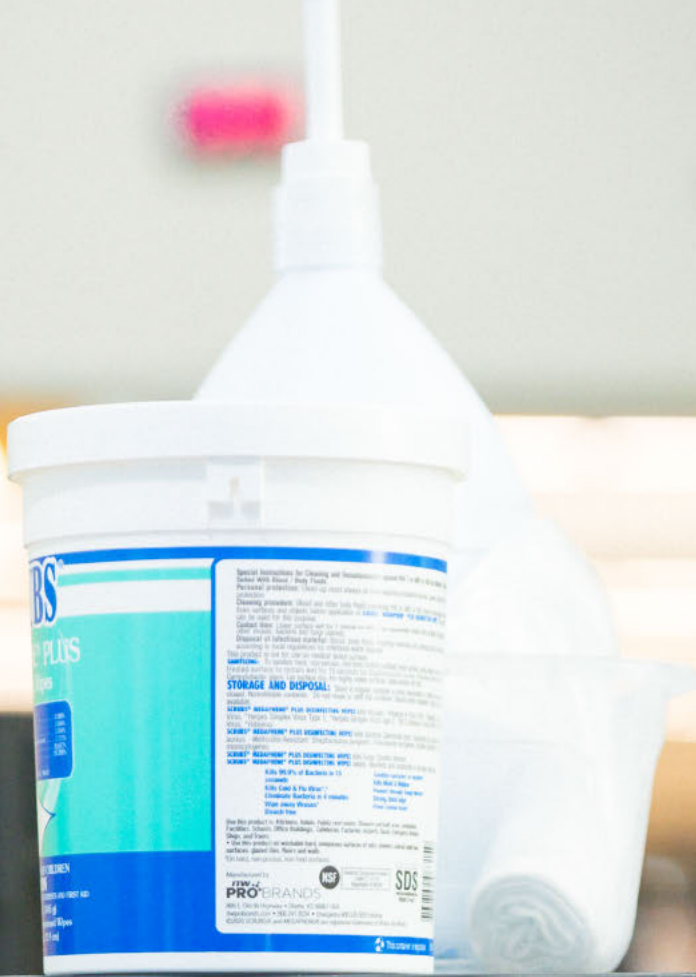
(b) (6), (b) (7)(C), (b) (7)(A)



---

# **EXHIBIT 1**





**Remember to sanitize hands  
after passing through.**



*Thank you for your cooperation  
to keep everyone safe.*

(b) (4), (b) (7)(A)

(b) (4), (b) (7)(A)

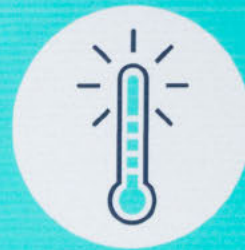




# **EXHIBIT 2**

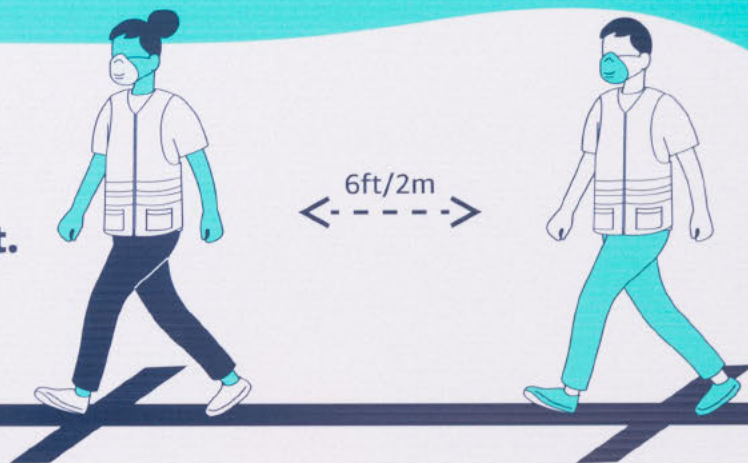


# TEMPERATURE CHECK HOW-TO

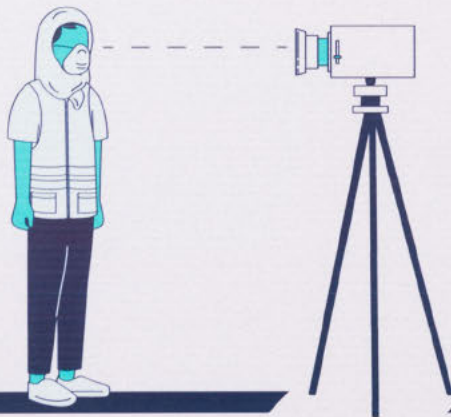


By entering this building, you are  
consenting to be screened.

- 1 Keep walking  
and **keep 2  
meters apart.**



- 2 Face the camera  
and **look directly  
into it.**



- 3 Continue to walk  
through the area  
**without stopping,**  
unless instructed  
otherwise.



THANKS TO YOU.

(b) (7)(A), (b) (4)



WHS Doc Management



TEMPERATURES  
ABOVE 100.3

Health information to help answer questions.

Out of an abundance of caution, return home and contact your employer if you have chills, a fever, flu-like symptoms, shortness of breath, severe loss of taste or smell.

You cannot return to an Amazon site, until you are free of fever for at least 72 hours, without the use of fever-reducing or other symptomatic medications. If you are diagnosed with COVID-19, Amazon has other requirements before you can return to our site. Please ask your employer to contact their Amazon contract manager.

Free COVID-19 Support, 24/7. If you are diagnosed with COVID-19, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support. 1-800-510-7990 [grandrounds.com/amazon](https://grandrounds.com/amazon)

Since you are being sent home for an elevated temperature, you'll be paid for your scheduled shift today, up to five hours maximum. Your time will be extended for the remainder of the 72-hour period, so you will not lose any shift or incur any attendance infractions. Your schedule for this period will be emailed. If you prefer to use your paid time off of available during this period, please call HRG or the ERC.

If during that time you are diagnosed with COVID-19, please contact us immediately so we can support you.

If you have any questions please contact the ERC.

Contact the ERC at 1-888-892-7180, or your HR team, DSP, or Flex Support to notify them of the situation.

(b) (7)(A), (b) (4)

THANKS TO YOU.

SELECTING THE  
CORRECT FACE  
COVERING

Do:

Wear an approved cloth face covering or a surgical mask.

Wear the mask over your nose and mouth.

Do not:

Wear the mask over your eyes.

Wear the mask over your mouth and nose.

THANKS TO YOU.

WE'RE PRACTICING  
SOCIAL DISTANCING  
IN THIS AREA

Stay a safe 6ft/2m distance apart.  
Do not shake hands or hug.

6ft/2m

PRE-ENTRY  
TEMPERATURE CHECK

As an additional preventative measure, from today forward, everyone will have their temperature checked before entering the building.

Anyone who has a temperature at or above 37.8°C (100°F), or any of the symptoms below, will be asked to return home out of an abundance of caution.

Sore throat

Fatigue

Nausea or vomiting

Headache

Diarrhea

Dry cough or shortness of breath

Fever of 100°F or higher

Congestion or runny nose

Muscle or body aches

New loss of taste or smell

Screening is required for anyone entering the building, including associates, managers, support staff, contractors, and visitors.

Maintain 6ft/2m between yourself and others while you wait.

Free COVID-19 Support, 24/7. If you have a fever or other flu-like symptoms, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support. 1-800-510-7990 [grandrounds.com/amazon](https://grandrounds.com/amazon)

(b) (7)(A), (b) (4)

THANKS TO YOU.

WHS Case Management



# TEMPERATURES ABOVE 100.3

Here's additional information to help answer questions.

- ❗ Out of an abundance of caution, **return home** and contact your employer. If you have chills, a fever, flu-like symptoms, shortness of breath, please seek medical attention.
- ❗ **You cannot return to an Amazon site, until you are free of fever for at least 72 hours**, without the use of fever-reducing or other symptoms altering medicines. If you are diagnosed with COVID-19, Amazon has other requirements before you can return to our site. Please ask your employer to contact their Amazon contract manager.
- ❗ **Free COVID-19 Support, 24/7** if you are diagnosed with COVID-19, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support.

[amazon.com/industrial](https://amazon.com/industrial)

If you are diagnosed with COVID-19, you'll be paid for up to five hours maximum. Your time will be excused for the 72-hour period, so you will not lose any UPT or other benefits. Your schedule for this period will be excused. If you need time off (if available) during this period, please call

If you are diagnosed with COVID-19, please contact the ERC.

Call 1-800-7180, or your HR team, DSP, or Flex Support to

(b) (7)(A), (b) (4)

WHS Doc Management

# INFRARED CAMERAS

By entering this building, you are consenting to be screened.

Thermal infrared cameras provide contact-free temperature screening. They have been used in the past screening



ICI thermal cameras have FDA approval.



These IR cameras detect elevated skin temperatures on by various factors.



These cameras are used in high-traffic areas (that is, where many people are present).

THANKS TO YOU.

## \*\*Attention\*\*

Working in from your phone?



First you **BADGE** in, THEN you clock in!

**ONLY** CLOCK IN\* OR OUT FROM YOUR PHONE ONCE **IN** THE BUILDING AND **PAST** THE SECURITY DESK OR TURNSTILE AREA. Reporting false information may result in disciplinary action up to and including termination.

fulfillment

(b) (6), (b) (7)(C), (b) (7)(A)





Mask Distribution

Item	Quantity	Location
Mask	100	Warehouse
Mask	100	Warehouse
Mask	100	Warehouse



(b) (6), (b) (7) (C)

Selecting face cover



DO: Wear masks or protection against



DON'T: Wear re-usable, non-disposable masks that can be washed and reused.

Thank you for your help to keep everyone safe.

Please





Do Not Enter

Do Not Enter

Enter

(b) (6), (b) (7)(C), (b) (7)(A)

(b) (6), (b) (7)(C), (b) (7)(A)

(b) (7)(A), (b) (7)(C)

TEMPERATURES ABOVE 100°F

(b) (6), (b) (7)(C)





(b) (7)(A), (b) (4)

(b) (7)(A), (b) (4)

(b) (7)(A), (b) (4)



**INFRARED CAMERAS**

Thermal infrared cameras provide instant, accurate, and contact-free temperature screening. This technology has been used in the past screenings for H1N1, SARS, and flu.

- Thermal infrared cameras have a 5-foot clearance.
- Thermal IR cameras can detect a 0.1-degree Fahrenheit temperature change.
- These cameras are non-invasive and are used in hospitals, health centers, public areas that are crowded, and more.

THANKS TO YOU.

**PRE-ENTRY TEMPERATURE CHECK**

As an additional preventative measure, from today forward, everyone will have their temperature checked before entering the building.

Anyone who has a temperature at or above 37.8°C (100°F), or any of the symptoms below, will be asked to return home out of an abundance of caution.

Sore throat	Fatigue	Nausea or vomiting	Headache	Diarrhea
Dry cough or shortness of breath	Fever of 100°F or higher	Congestion or runny nose	Muscle or body aches	New loss of taste or smell

**Screening is required** for anyone entering the building, including associates, managers, support staff, contractors, and visitors.

**Maintain 6ft/2m between yourself and others** while you wait.

**Free COVID-19 Support, 24/7.** If you have a fever or other flu-like symptoms, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support. 1-800-510-7990

[grandrounds.com/amazon](https://grandrounds.com/amazon)

**THANKS TO YOU.**

Amazon Management



**Selecting the correct face covering**

Illustration showing correct and incorrect ways to wear a face mask.

6 ft  
PLEASE



Do Not Enter

## INFRARED CAMERAS

By entering this building, you are consenting to be screened.



Thermal infrared cameras provide instant, accurate, and contact-free temperature screening. This technology has been used in the past screenings for H1N1, SARS, and Ebola.



ICI thermal infrared cameras have FDA 510(k) clearance.



These IR cameras can detect elevated skin temperatures brought on by various external causes.



These cameras are non-invasive and are used in hospitals, health settings, public areas (that is, airports), and more.

THANKS TO YOU



### Selecting the correct face covering



## PRE-ENTRY TEMPERATURE CHECK

As an additional preventative measure, from today forward, everyone will have their temperature checked before entering the building. Anyone who has a temperature at or above 37.8°C (100°F), or any of the symptoms below, will be asked to return home out of an abundance of caution.



Sore throat



Fatigue



Nausea or vomiting



Headache



Dry cough or shortness of breath



Fever of 100°F or higher



Congestion or runny nose



Muscle or body aches



Diarrhea



New loss of taste or smell

Screening is required for anyone entering the building, including associates, managers, subcontractors, and visitors. Maintain 6ft/2m between yourself and others while you wait.

Free COVID-19 testing available at the Amazon Center for Innovation, 24/7. If you have a fever or other flu-like symptoms, call Grand Rounds. Their medical team will help you get the support you need.

1-800-510-7990

grandrounds.com/amazon

THANKS TO YOU.

Amazon

(b) (7)(C), (b) (4)

(b) (7)(C), (b) (4)

(b) (6), (b) (7)(C), (b) (7)(F)

(b) (6), (b) (7)(C), (b) (7)(A)

PLEASE

(b) (7)(A)

# **EXHIBIT 3**



TEMPERATURES  
ABOVE 100.3

Health-related information to help answer questions.

- Out of an abundance of caution, return home and contact your employer if you have chills, a fever, flu-like symptoms, shortness of breath, severe loss of taste or smell.
- You cannot return to an Amazon site, until you are free of fever for at least 72 hours, without the use of fever-reducing or other symptomatic medications. If you are diagnosed with COVID-19, Amazon has other requirements before you can return to our site. Please ask your employer to contact their Amazon contract manager.
- Free COVID-19 Support, 24/7. If you are diagnosed with COVID-19, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support. 1-800-510-7990 [grandrounds.com/amazon](https://grandrounds.com/amazon)
- Since you are being sent home for an elevated temperature, you'll be paid for your scheduled shift today, up to five hours maximum. Your time will be extended for the remainder of the 72-hour period, so you will not lose any shift or incur any attendance infractions. Your schedule for this period will be emailed. If you prefer to use your paid time off of available during this period, please call HRG or the ERC.
- If during that time you are diagnosed with COVID-19, please contact us immediately so we can support you.
- If you have any questions please contact the ERC.

Contact the ERC at 1-888-892-7180, or your HR team, DSP, or Flex Support to notify them of the situation.

THANKS TO YOU.

SELECTING THE  
CORRECT FACE  
COVERING

Do:



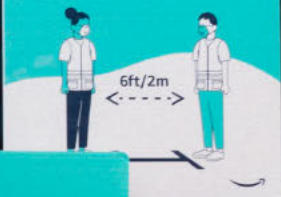
Do not:



THANKS TO YOU.

WE'RE PRACTICING  
SOCIAL DISTANCING  
IN THIS AREA


Stay a safe 6ft/2m distance apart.  
Do not move chairs or tables.




PRE-ENTRY  
TEMPERATURE CHECK

As an additional preventative measure, from today forward, everyone will have their temperature checked before entering the building.


Anyone who has a temperature at or above 37.8°C (100°F), or any of the symptoms below, will be asked to return home out of an abundance of caution.




Sore throat




Fatigue




Nausea or vomiting




Headache




Diarrhea




Dry cough or shortness of breath




Fever of 100°F or higher



Congestion or runny nose



Muscle or body aches



New loss of taste or smell

Screening is required for anyone entering the building, including associates, managers, support staff, contractors, and visitors.

Maintain 6ft/2m between yourself and others while you wait.

Free COVID-19 Support, 24/7. If you have a fever or other flu-like symptoms, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support. 1-800-510-7990 [grandrounds.com/amazon](https://grandrounds.com/amazon)

THANKS TO YOU.

# **EXHIBIT 4**





(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C), (b) (7)(A)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C), (b) (7)(A)

(b) (6), (b) (7)(C), (b) (7)(A)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C), (b) (7)(A)





(b) (6), (b) (7)(C), 7(A)

time  
clock

Loss Prevention and  
Security are here to help

**GET THE FACTS BEFORE YOU SIGN!**

**Authorization Cards:** If someone asks you to sign an authorization card or complete an online authorization form, we want to make sure you have all the facts before you sign. An authorization card or online form is a legally binding contract. If you sign, you agree to pay the RWDSU monthly dues out of your paycheck. There are no free trials.

**Your Rights:** You have the right to refuse to sign anything you are not comfortable signing. When you sign a union card or complete an online authorization form, you are committing to having the union act as your sole representative. We want to caution you, you will be giving up your right to speak for yourself.

**Working Together:** We are proud of our One Team BHM1 Family! We believe that working together directly is the most effective way to understand and improve our workplace. We want to hear from you and work with you directly. Your direct voice matters.



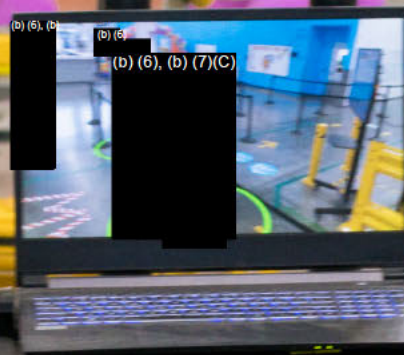
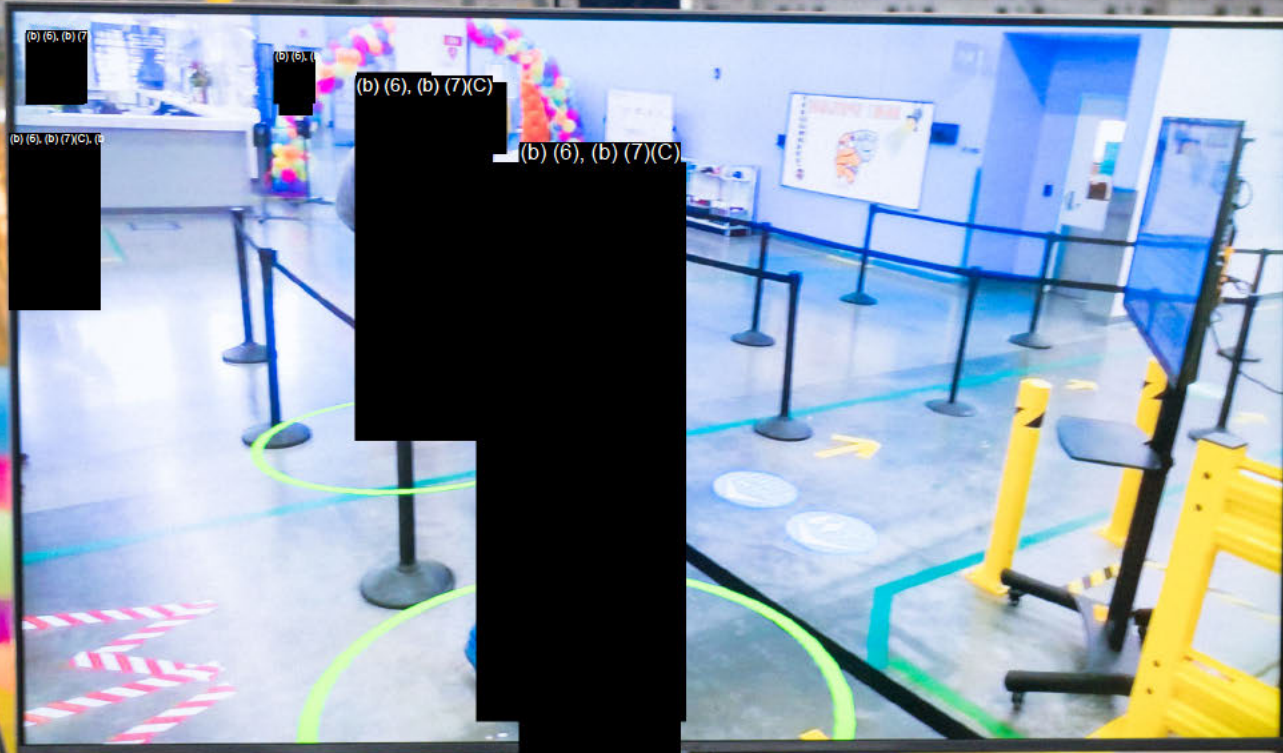






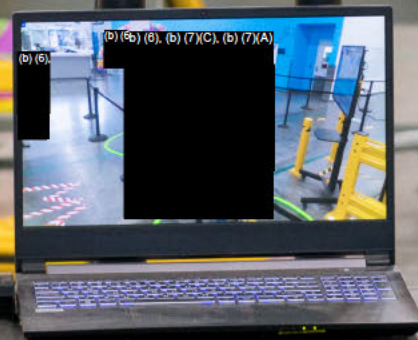
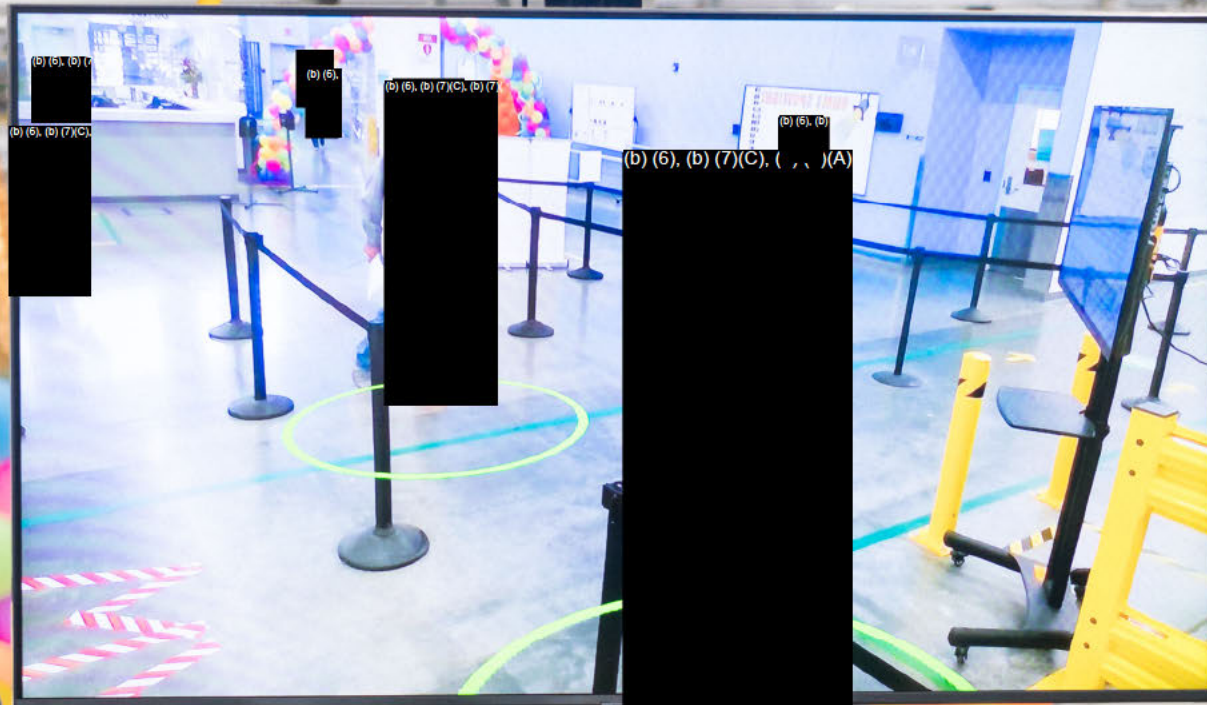
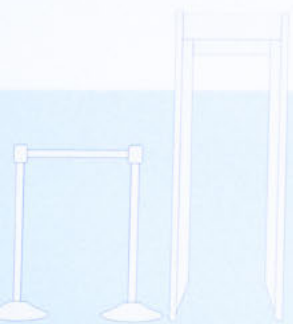


# **EXHIBIT 5**





# it screening



(b) (6), (b) (7)(C), (b) (7)(A)

(b) (6), (b) (7)(C), (b) (7)(A)





EXIT

5155

C.5  
5155

**GET THE FACTS BEFORE YOU SIGN!**

**Authorization Cards:** If someone asks you to sign an authorization card or complete an online authorization form, we want to make sure you have all the facts before you sign. An authorization card or online form is a legally binding contract. If you sign, you agree to pay the RWDSU monthly dues out of your paycheck. There are no free trials.

**Your Rights:** You have the right to refuse to sign anything you are not comfortable signing. When you sign a union card or complete an online authorization form, you are committing to having the union act as your sole representative. We want to caution you, you will be giving up your right to speak for yourself.

**Working Together:** We are proud of our One Team BHM1 Family! We believe that working together directly is the most effective way to understand and improve our workplace. We want to hear from you and work with you directly. Your direct voice matters.

time  
clock

Loss Prevention and  
Security are here to help

Black circular object on a stand

Yellow industrial equipment with black handle

# **EXHIBIT 6**



# TEMPERATURES ABOVE 100.3

Here's additional information to help answer questions.

- ❗ Out of an abundance of caution, **return home** and contact your employer. If you have chills, a fever, flu-like symptoms, shortness of breath, please seek medical attention.
- ❗ **You cannot return to an Amazon site, until you are free of fever for at least 72 hours**, without the use of fever-reducing or other symptoms altering medicines. If you are diagnosed with COVID-19, Amazon has other requirements before you can return to our site. Please ask your employer to contact their Amazon contract manager.
- ❗ **Free COVID-19 Support, 24/7** if you are diagnosed with COVID-19, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support.

[amazon.jobs.com/amazon](https://amazon.jobs.com/amazon)

If you are diagnosed with an elevated temperature, **you'll be paid for** up to five hours maximum. Your time will be excused for the 72-hour period, so you will not lose any UPT or other benefits. Your schedule for this period will be excused. If you need time off (if available) during this period, please call

If you are diagnosed with COVID-19, please contact the ERC.

Call 1-800-7180, or your HR team, DSP, or Flex Support to

(b) (7)(A), (b) (4)

WHS Doc Management

# INFRARED CAMERAS

By entering this building, you are consenting to be screened.

Thermal infrared cameras provide contact-free temperature screening. They have been used in the past screening



ICI thermal cameras have FDA approval.



These IR cameras detect elevated skin temperatures on by various factors.



These cameras are used in high-traffic areas (that is, where people are walking).

THANKS TO YOU.

## \*\*Attention\*\*

Working in from your phone?



First you **BADGE** in, **THEN** you clock in!

**ONLY** CLOCK IN\* OR OUT FROM YOUR PHONE ONCE **IN** THE BUILDING AND **PAST** THE SECURITY DESK OR TURNSTILE AREA. Reporting false information may result in disciplinary action up to and including termination.

fulfillment

(b) (6), (b) (7)(C), (b) (7)(A)



# **EXHIBIT 7**









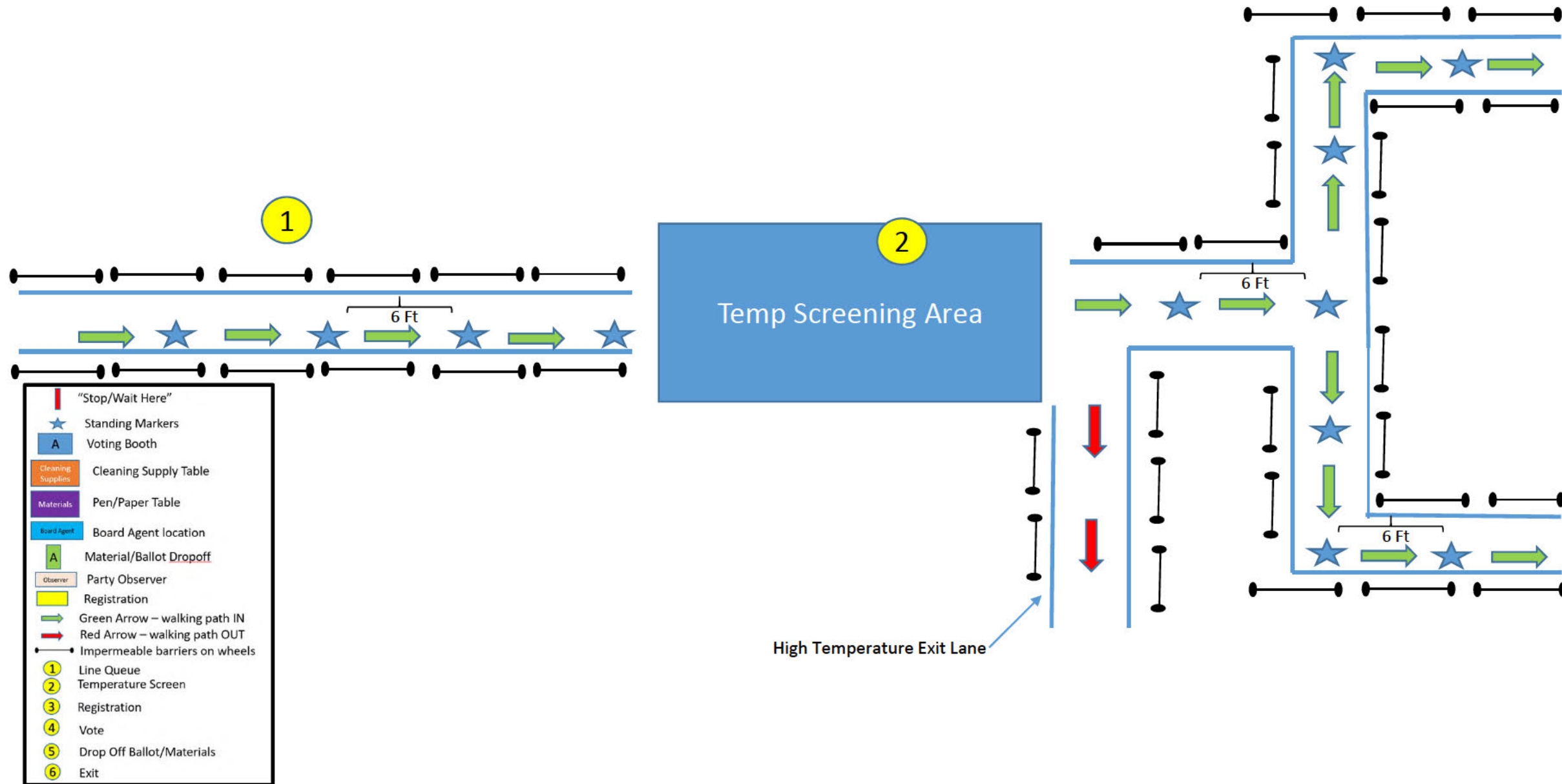
# **EXHIBIT 8**



# **EXHIBIT 9**

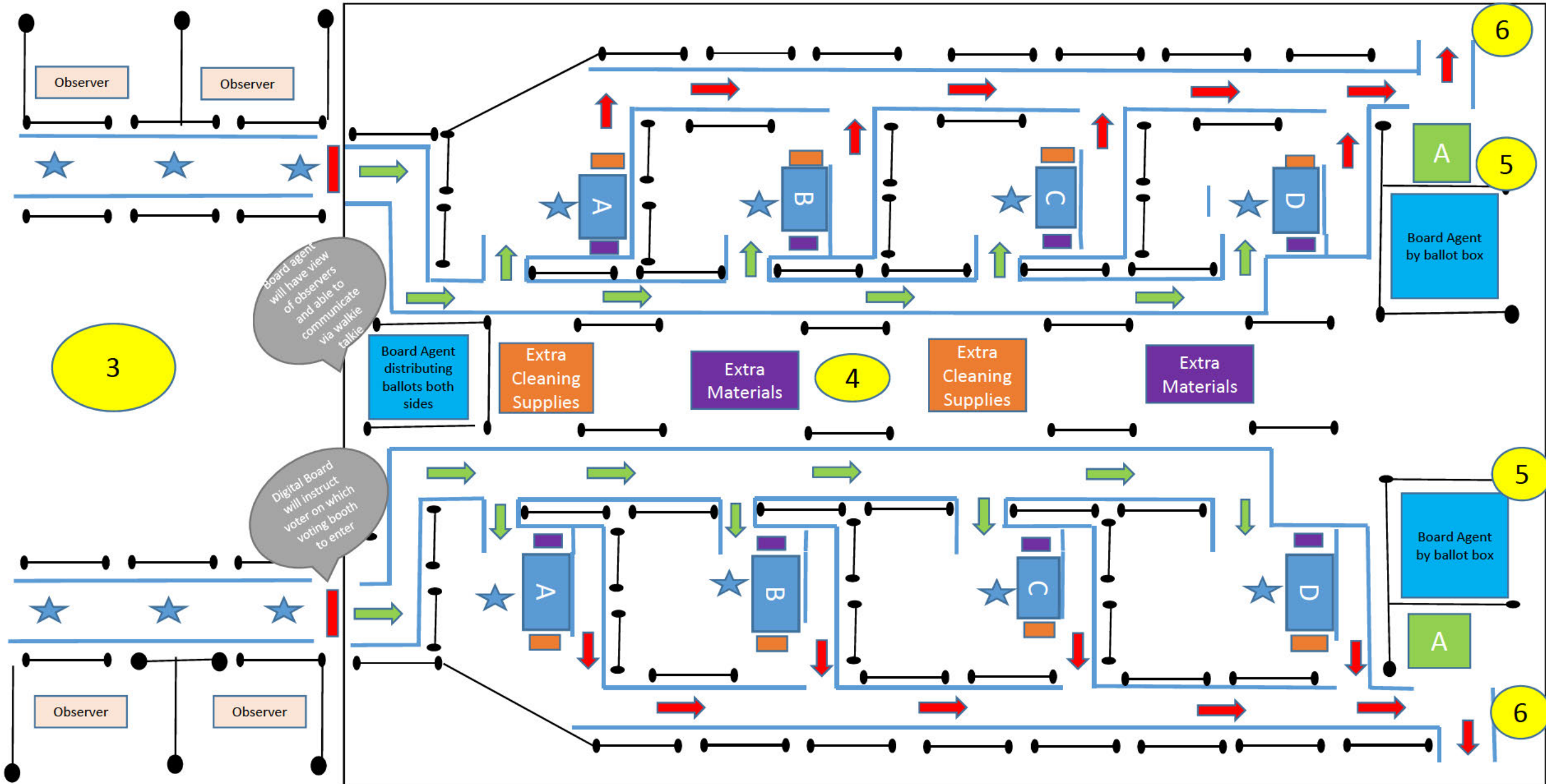


# Parking Lot → Temp Screening





# Voting Tent (Barriers Included)





“Stop/Wait Here”



Standing Markers

A

Voting Booth

Cleaning  
Supplies

Cleaning Supply Table

Materials

Pen/Paper Table

Board Agent

Board Agent location

A

Material/Ballot Dropoff

Observer

Party Observer



Registration



Green Arrow – walking path IN



Red Arrow – walking path OUT



Impermeable barriers on wheels

1

Line Queue

2

Temperature Screen

3

Registration

4

Vote





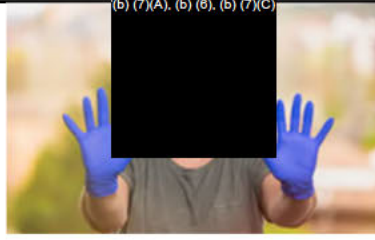


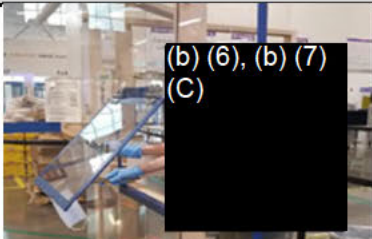


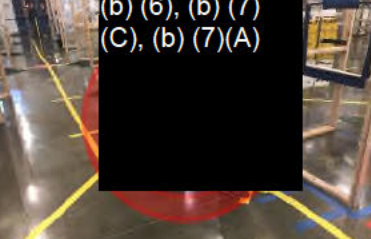
5

Drop Off Ballot/Materials

6

Exit

# **EXHIBIT 10**

PMV Title:		Mask Distribution: Vending Machine Style with Tongs					
ID #	XXXXX	Revision #	V1.0	ID Barcode	Required PPE		 Workplace Health & Safety
FC(s)	ALL FC	Revision Date	4/28/2020	<b>Policy</b> (b) (7)(A), (b) (4)	 Facemask  nitrile gloves		
Owner	(b) (7)(A), (b) (7)(C)	Cycle Time					
Safety Requirements				Exception Handling/Quality Tips			
A. Associates distributing masks must wear the following PPE: Facemask, nitrile gloves. No hand – mask touch is allowed even with gloves by distributor. Distribution shall be done by tongs				A. Sites shall have an established POC who has access to a stock of masks. When an associate distributing masks runs out of supply to hand out, they shall contact this POC, who can then bring additional masks.			
B. Before distributing masks, associates shall wash their hands following health authority guidelines including scrubbing time in excess of 20 sec				B. If an associate needs a new mask during the shift, because they are arriving after the designated start of shift or for another reason, they shall contact site Safety or another designated person to receive a mask.			
C. Cleaning shall occur at least every two hours, at start of shift, and at end of shift, or in the event of contamination impacting the station. Refer to the <u>WHS Barrier and Thermometer Cleaning PMV</u> .							
1	2	3	4				
							
Wash hands following local health authority best practices.	Wear nitrile gloves. Start with a new pair and change immediately if they become contaminated.	Distributors are given an adequate quantity to distribute by the site POC.	Distributor shall grab a mask from the box using the provided tongs taking care to not fold or tear it.				
5	6	7 - EXCEPTION	8 - EXCEPTION				
							
While not permitting mask to touch side or bottom of hole, distributor uses one hand to open flap and tongs to pass mask.	The receiving associate shall grab the mask by the bottom strap only, taking care not to grab the mask by the filter.	Distributors shall never hand associates masks in a manner bypassing the Plexiglas protector.	Ensure associates remain more than 6' apart while queueing, by following 5S tape marking.				

# **EXHIBIT 11**







# **EXHIBIT 12**





(b) (7)(A), (b) (4)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C), (b) (7)(D)



TEMPERATURES ABOVE 101.3

INFRARED CAMERAS

These cameras can detect when a person's body temperature is above 101.3°F (38.5°C). This is a sign of a fever, which is a common symptom of COVID-19. If a person's temperature is above 101.3°F, they should be asked to leave the facility and seek medical attention.

How to use the camera:

- 1. Stand in the line and wait for the camera to scan your forehead.
- 2. If the camera detects a fever, you will be alerted by a red light and a buzzer.
- 3. If you have a fever, you should be asked to leave the facility and seek medical attention.

(b) (7)

(b) (7)

KEEP THE BARRIER CLEAN

The barrier should be cleaned:

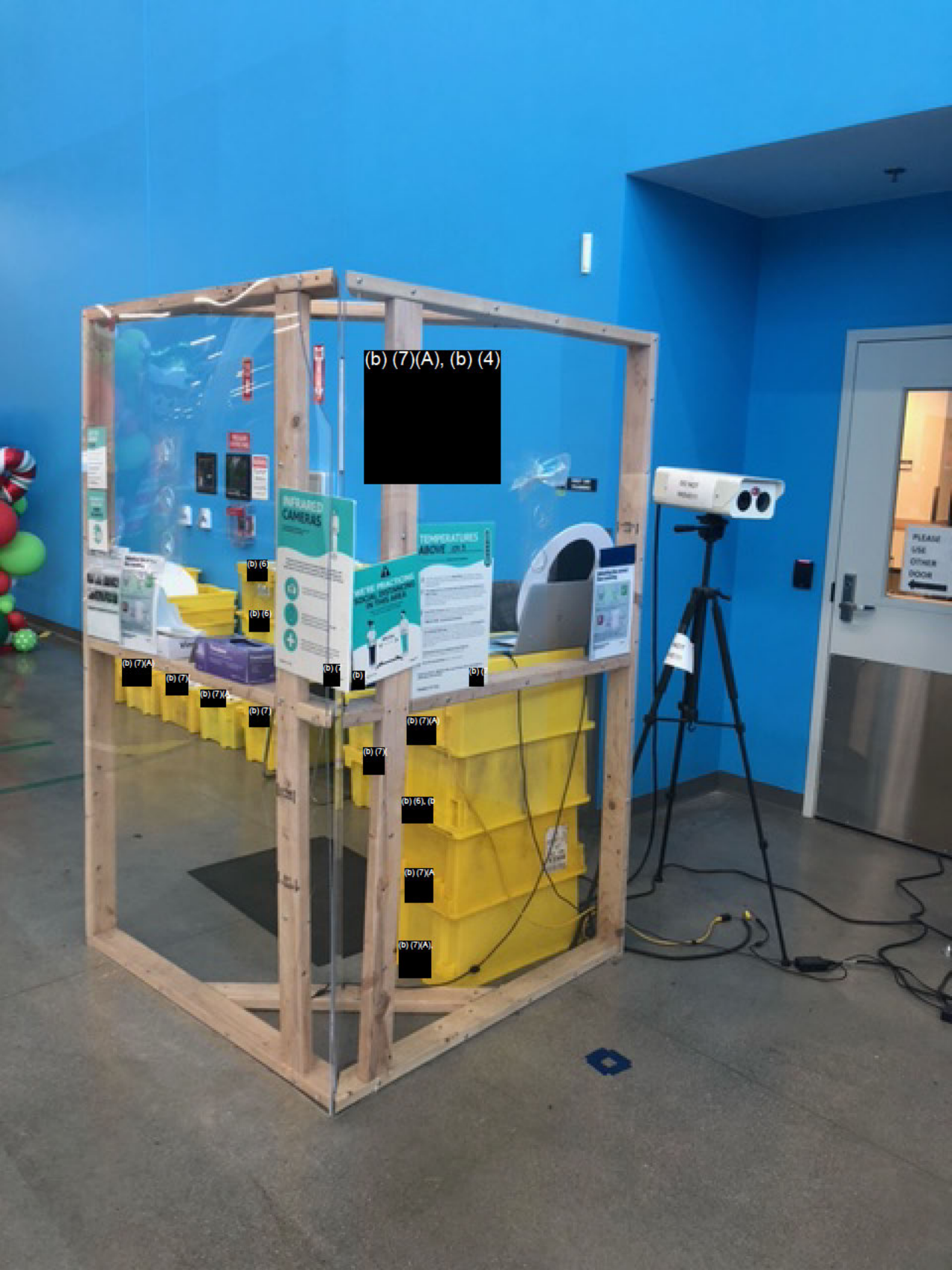
- After every use
- At the beginning and end of each day
- After a spill or splash
- When the barrier is damaged
- When the barrier is dirty
- When the barrier is wet

REMEMBER WASH YOUR HANDS

HOW WE

THANK YOU





(b) (7)(A), (b) (4)

(b) (6)

(b) (6)

(b) (7)(A)

(b) (7)

(b) (7)(A)

(b) (7)

(b) (7)

(b) (7)

(b) (7)

(b) (7)(A)

(b) (7)(A)

(b) (6), (b) (7)(A)

(b) (7)(A)

(b) (7)(A)





PNV T01 Mask Distribution

Qty	Material	Unit
100	Mask	100
100	Mask	100
100	Mask	100

...distributing masks that will be used in the warehouse. These will be used for the distribution of masks to the warehouse staff.



(D) (7)(A), (D) (4), (D) (7)(A), (D) (4)

### Selecting face cover



**DO:** Wear masks or protection against exposure



**DON'T:** Wear masks with outlet valves, as they can increase the transmission of the virus. You can escape the virus.

Thank you for your help to keep everyone safe

MASKS  
WASH YOUR HANDS  
KEEP YOUR DISTANCE



Please

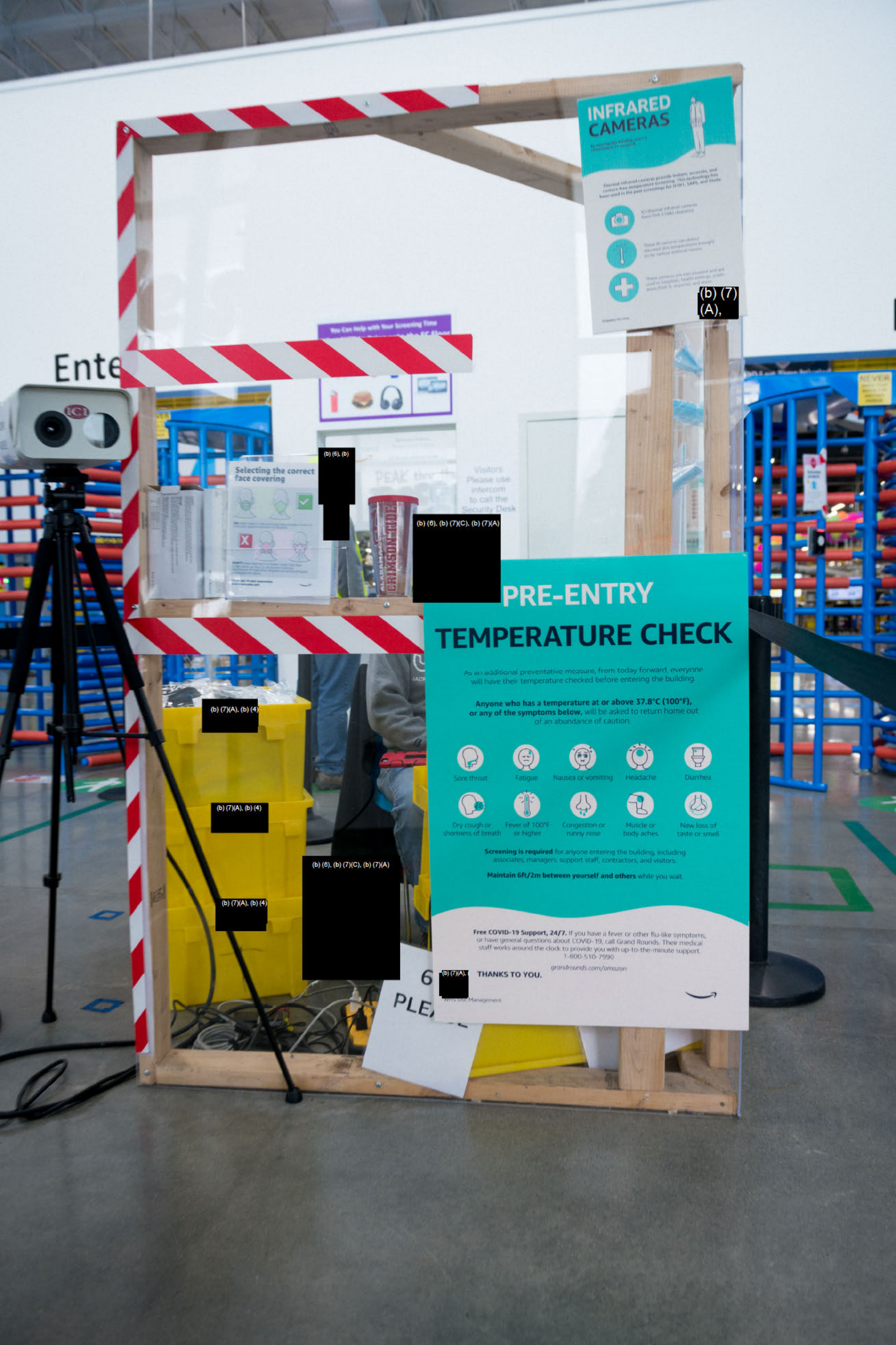












## INFRARED CAMERAS

Thermal infrared cameras provide instant, accurate, and contact-free temperature screening. This technology has been used in the past screenings for H1N1, SARS, and flu.



ICI thermal infrared cameras have 1/10th of a 1/10th of a degree accuracy.



Thermal IR cameras can detect 1/10th of a degree difference in temperature brought on by various external factors.



These cameras are non-invasive and are used in hospitals, health centers, public areas that is airport, and more.

THANKS TO YOU.

(b) (7) (A),

You Can Help with Your Screening Time  
Please use the intercom to call the Security Desk.

Enter

### Selecting the correct face covering



(b) (6), (b) (7) (C)

(b) (6), (b) (7) (C), (b) (7) (A)

## PRE-ENTRY TEMPERATURE CHECK

As an additional preventative measure, from today forward, everyone will have their temperature checked before entering the building.

Anyone who has a temperature at or above 37.8°C (100°F), or any of the symptoms below, will be asked to return home out of an abundance of caution.



Sore throat



Fatigue



Nausea or vomiting



Headache



Diarrhea



Dry cough or shortness of breath



Fever of 100°F or higher



Congestion or runny nose



Muscle or body aches



New loss of taste or smell

Screening is required for anyone entering the building, including associates, managers, support staff, contractors, and visitors.

Maintain 6ft/2m between yourself and others while you wait.

Free COVID-19 Support, 24/7. If you have a fever or other flu-like symptoms, or have general questions about COVID-19, call Grand Rounds. Their medical staff works around the clock to provide you with up-to-the-minute support. 1-800-510-7990

grandrounds.com/amazon

THANKS TO YOU.

(b) (7) (A),

Amazon Management



(b) (7) (A), (b) (4)

(b) (7) (A), (b) (4)

(b) (6), (b) (7) (C), (b) (7) (A)

(b) (7) (A), (b) (4)

6 PLEASE



Do Not Enter

## INFRARED CAMERAS

By entering this building, you are consenting to be screened.



Thermal infrared cameras provide instant, accurate, and contact-free temperature screening. This technology has been used in the past screenings for H1N1, SARS, and Ebola.



ICI thermal infrared cameras have FDA 510(k) clearance.



These IR cameras can detect elevated skin temperatures brought on by various external causes.



These cameras are non-invasive and are used in hospitals, health settings, public areas (that is, airports), and more.

THANKS TO YOU

(b) (7)

(b) (6), (b) (7)(C), (b) (7)

(b) (6), (b) (7)(C), (b) (7)(A)

### Selecting the correct face covering



## PRE-ENTRY TEMPERATURE CHECK

As an additional preventative measure, from today forward, everyone will have their temperature checked before entering the building. Anyone who has a temperature at or above 37.8°C (100°F), or any of the symptoms below, will be asked to return home out of an abundance of caution.



Sore throat



Fatigue



Nausea or vomiting



Headache



Dry cough or shortness of breath



Fever of 100°F or higher



Congestion or runny nose



Muscle or body aches



Diarrhea



New loss of taste or smell

Screening is required for anyone entering the building, including associates, managers, subcontractors, and visitors. Maintain 6ft/2m between yourself and others while you wait.

Free COVID-19 testing available at the building, 24/7. If you have a fever or other flu-like symptoms, call Grand Rounds. Their medical support team is available 24/7. If you have a fever or other flu-like symptoms, call Grand Rounds. Their medical support team is available 24/7. If you have a fever or other flu-like symptoms, call Grand Rounds. Their medical support team is available 24/7.

PLEASE STAY TO YOU.

grandrounds.com/amazon

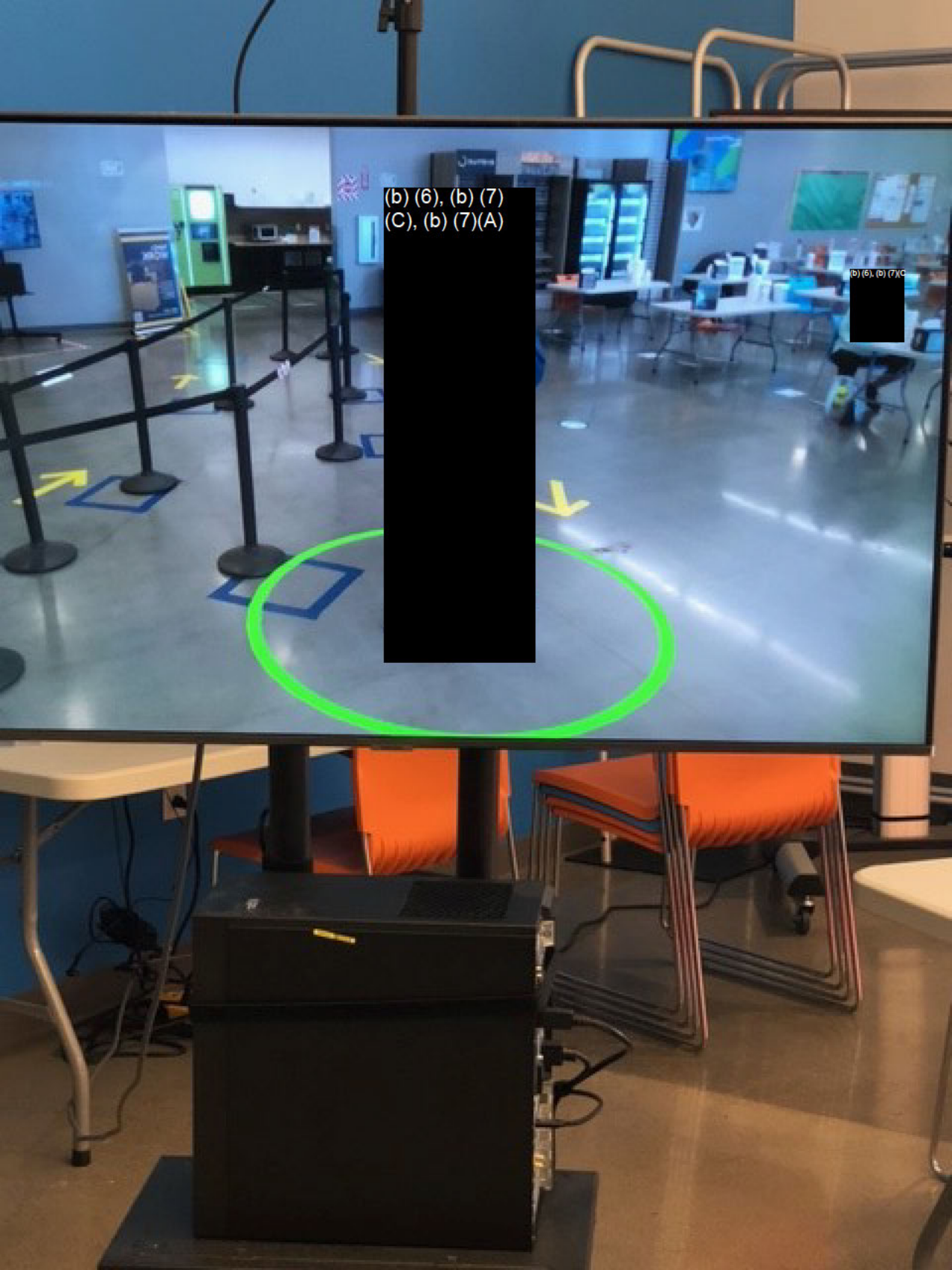
(b) (7)(A), (b) (4)

(b) (7)(A), (b) (4)

(b) (7)(A), (b) (4)

# **EXHIBIT 13**



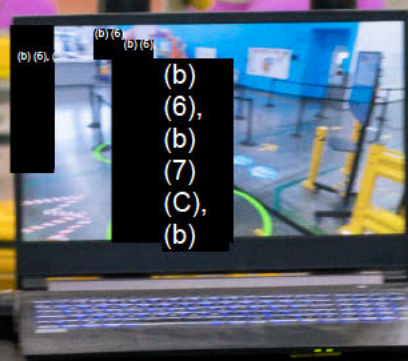
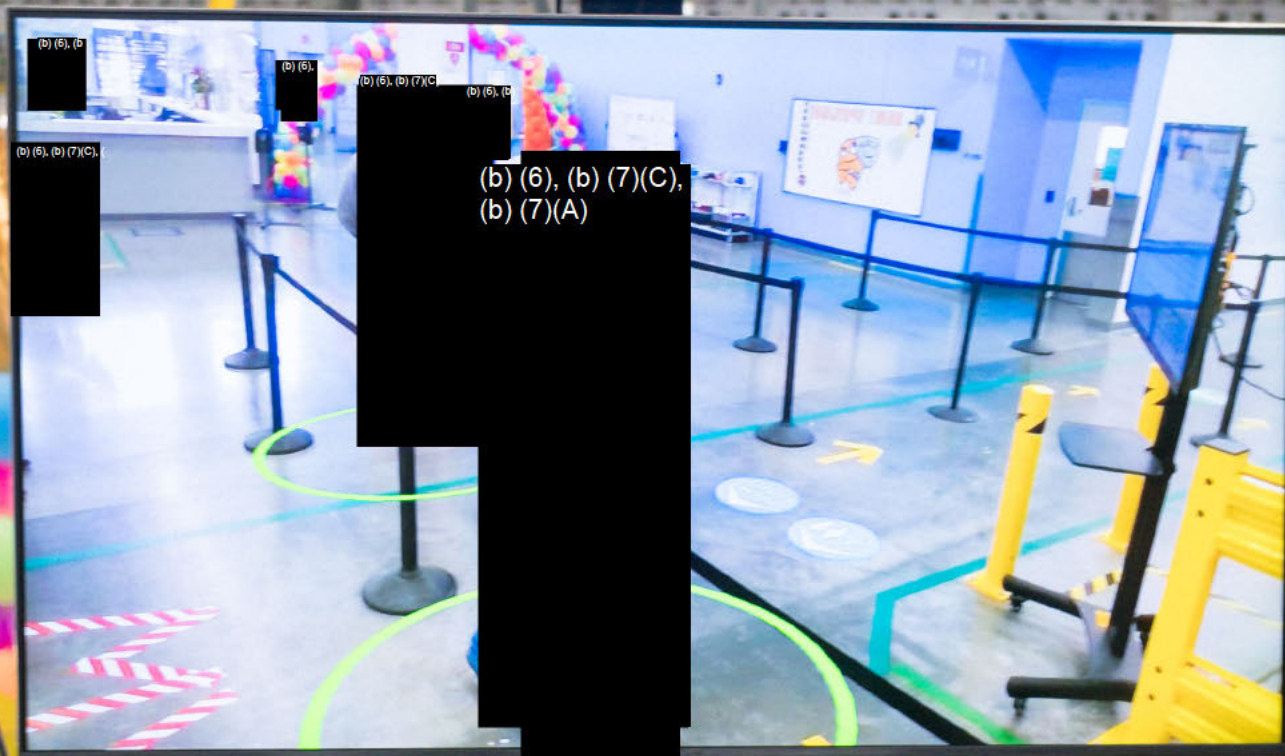


(b) (6), (b) (7)  
(C), (b) (7)(A)

(b) (6), (b) (7)(C)

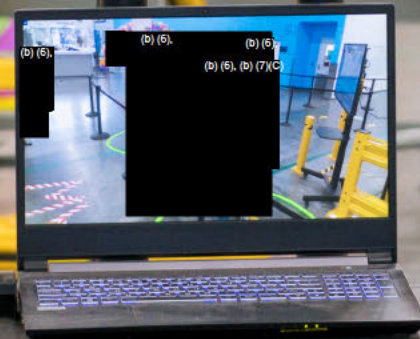
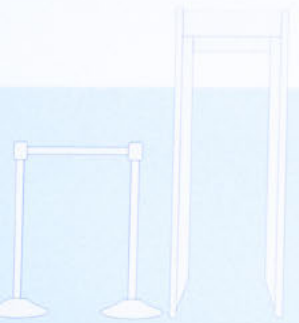
# **EXHIBIT 14**







# it screening







(b) (6), (b) (7)(C), (b) (7)(A)

time clock

Loss Prevention and Security are here to help

**GET THE FACTS BEFORE YOU SIGN!**

Authorization Cards: If someone asks you to sign an authorization card or complete an online authorization form, we want to make sure you have all the facts before you sign. An authorization card or online form is a legally binding contract that commits you to pay the RWDSU monthly dues out of your paycheck. There are no free trials.

Your Rights: You have the right to refuse to sign anything you are not comfortable signing. When you sign a union card or complete an online authorization form, you are committing to having the union act as your sole representative. We want to caution you, you will be giving up your right to speak for yourself.

Working Together: We are proud of our One Team BHM1 Family! We believe that working together directly is the most effective way to understand and improve our workplace. We want to hear from you and work with you directly. Your direct voice matters.

# **EXHIBIT 15**





HEALTHY HANDS  
START HERE

Purell

Purell

ATTENTION  
STOP SCAN  
CLICK ENTER

SAN STATION





# **EXHIBIT 16**





(b) (6), (b) (7)(C)

(b) (6), (b) (7)

(b) (7)

(b) (7)(A), (b) (4)









1 worldwide and is the second-largest private employer in the United States. Amazon added  
2 250,000 jobs in the third quarter, and 100,000 in the first month of the fourth.

3 5. Amazon's WHS team is led by experienced health and safety professionals:

4 a. Heather MacDougall is the Vice President of Worldwide Operations,  
5 Workplace Health and Safety for Amazon and has served in this position  
6 since April 2019. From 2002 until 2003, she served as chief counsel to  
7 former Occupational Safety and Health Review Commission ("OSHRC")  
8 Chairman W. Scott Railton. OSHRC is an independent federal agency  
9 that adjudicates workplace health and safety disputes between the U.S.  
10 Department of Labor and employers. After an intervening period in  
11 private practice, in 2014, MacDougall was appointed by President Barack  
12 Obama to serve as a Commissioner of OSHRC and was unanimously  
13 confirmed by the United States Senate. From 2014 until 2019, she served  
14 as a Commissioner of OSHRC, including as the Chair of the Commission  
15 from January 2017 until March 2019.

16 b. Amazon's (b) (6), (b) (7)(C), (b) (7)(A),  
17 who reports to me, (b) (6), (b) (7)(C), (b) (7)(A)  
18 (b) (6), (b) (7)(C), (b) (7)(A) and brings experience from (b) (6), (b) (7)(C), (b) (7)(A)  
19 (b) (6), (b) (7)(C), (b) (7)(A).

20 c. Amazon's (b) (6), (b) (7)(C), (b) (7)(A)  
21 (b) (6), (b) (7)(C), (b) (7)(A)  
22 (b) (6), (b) (7)(C), (b) (7)(A) and has more than  
23 (b) (6) years of experience in (b) (6), (b) (7)(C), (b) (7)(A)

- 1 d. Amazon's (b) (6), (b) (7)(C), (b) (7)(A)  
2 (b) (6), (b) (7)(C), (b) (7)(A)  
3 (b) (6), (b) (7)(C), (b) (7)(A) and previously has held several (b) (6), (b) (7)(C), (b) (7)(A)  
4 (b) (6), (b) (7)(C), (b) (7)(A) and brings over (b) (6) years' of experience.  
5 e. Amazon's (b) (6), (b) (7)(C), (b) (7)(A) is responsible for (b) (6), (b) (7)(C), (b) (7)(A)  
6 (b) (6), (b) (7)(C), (b) (7)(A) and has almost (b) (6) years of  
7 experience in (b) (6), (b) (7)(C), (b) (7)(A) having worked in several large  
8 companies.

9 6. Globally, the Amazon WHS Team totals nearly 4,000 safety professionals.

10 7. The WHS team uses Amazon's innovation, technology, and data insights to  
11 pursue the highest standards to keep our associates safe. We are committed to creating a culture  
12 of safety and use cutting-edge technology and data to measure safety progress. Amazon's vision  
13 is to synthesize leading health and safety expertise with Amazon's technological capabilities and  
14 relentless innovation to create new industry benchmarks for health and safety standards, starting  
15 first at Amazon.

16 8. The Amazon WHS Team has been closely tracking and adapting our workplace in  
17 response to the COVID-19 pandemic since it first appeared in China and as it spread to Europe  
18 and North America. Since the early days of the COVID-19 pandemic, we have worked closely  
19 with health authorities to proactively respond to federal, state, and local guidelines and new  
20 information, to protect our associates' health and safety, as well as the broader safety of the  
21 community, while also serving our customers with essential services.

22 9. The WHS Team is focused particularly on the public health imperatives of the  
23 COVID-19 pandemic. Amazon is an essential business and has worked hard to efficiently

1 distribute not only food and supplies to our nation's households but also critical health and safety  
2 products, such as personal protective equipment, to doctors, nurses, and others working on the  
3 front lines of the pandemic.

4 **II. AMAZON HAS CONSULTED WITH LEADING MEDICAL AND HEALTH**  
5 **EXPERTS TO DEVELOP HEALTH AND SAFETY MEASURES IN RESPONSE**  
6 **TO THE COVID-19 PANDEMIC**

7 10. Amazon prioritized our employees' safety throughout the COVID-19 pandemic  
8 and in the face of unprecedented circumstances. In close consultation with leading medical and  
9 health experts, the WHS Team has implemented extensive health and safety measures to protect  
10 our associates as they continue to provide a critical service to our country in this time and crisis.

11 11. Since the onset of the COVID-19 pandemic, the WHS Team has consulted with  
12 and been guided by global and national health and safety public agencies, including the World  
13 Health Organization and the CDC, as well as governors, mayors, and state and local health  
14 departments.

15 12. In developing our response to the COVID-19 pandemic, the WHS Team has  
16 regularly engaged with over 20 leading global medical and health experts (including pandemic  
17 response doctors, epidemiologists, and industrial hygienists).

18 13. Globally, the Amazon WHS Team totals nearly 4,000 safety professionals.

19 14. These experts include, but are not limited to:

- 20 a. Dr. Vin Gupta, an Affiliate Assistant Professor of Health Metrics Sciences  
21 at the Institute for Health Metrics and Evaluation at the University of  
22 Washington and a pulmonary and critical care medicine physician with  
23 extensive experience caring for critically ill COVID-19 patients since the  
24 early days of the outbreak in Seattle. Dr. Gupta is currently a Principal  
25 Scientist at Amazon and employed by Amazon.

- 1                   b. Dr. Ian Lipkin, the John Snow Professor of Epidemiology and Director of  
2                   the Center for Infection and Immunity at Columbia University and  
3                   member of the WHO Global Alert Response Network, with significant  
4                   expertise dealing with infectious diseases throughout the world, including  
5                   the 2003 SARS outbreak.
- 6                   c. Dr. Kenneth Lindemann, a board-certified internist with more than 30  
7                   years of professional leadership experience helping multinational  
8                   corporations integrate, mitigate, and communicate occupational and global  
9                   public health risks. Dr. Lindemann previously served as the Assistant  
10                  Medical Director of Health Services at ExxonMobil, and he is currently a  
11                  Consulting Physician with Corporate Medical Advisors (a subsidiary of  
12                  the International SOS Group), which is a physician-led group dedicated to  
13                  providing business-critical advice to entities concerned about managing  
14                  health-related impacts on global operability, worker safety, well-being and  
15                  workforce productivity.
- 16                 d. Dr. Greg Siren, a graduate of the University of Toronto, the Royal College  
17                 of Surgeons in Ireland, and Memorial University of Newfoundland and  
18                 currently a Consulting Physician at Corporate Medical Advisors. Dr. Siren  
19                 was previously an academic for 25 years at institutions such as Oregon  
20                 Health Sciences University, the University of British Columbia, and the  
21                 Vancouver Coastal Health Authority.
- 22                 e. Dr. M. Andrew Maier, a graduate of Ball State University, the University  
23                 of Michigan (M.S.), and the Toxicology University of Cincinnati (Ph.D.)



1 with more than 25 years of professional experience in the areas of  
2 environmental health, occupational hygiene, and toxicology. Dr. Maier is  
3 currently a Senior Managing Health Scientist with Cardno ChemRisk, and  
4 he was previously a Professor of Environmental and Industrial Hygiene at  
5 the University of Cincinnati College of Medicine;

6 f. Dr. Shannon H. Gaffney, a graduate of the University of Notre Dame  
7 School of Engineering and Johns Hopkins University Bloomberg School  
8 of Public Health (MHS, Ph.D.), currently a Senior Principal Health  
9 Scientist with Cardno ChemRisk. Dr. Gaffney has a wide range of  
10 experience in industrial hygiene, exposure assessment, and human health  
11 risk assessment, and a contributor to the research behind setting  
12 occupational and environmental exposure limits.

13 g. Dr. G. Scott Dotson, a graduate of Murray State University (B.S., M.S.)  
14 and the University of South Florida (Ph.D., Toxicology and Risk  
15 Assessment), currently a Managing Health Scientist with Cardno  
16 ChemRisk. Dr. Dotson has over 15 years of experience in the areas of  
17 toxicology, industrial hygiene, risk assessment, and occupational health,  
18 and for over 10 years as a former health scientist at the Centers for Disease  
19 Control and Prevention, National Institute for Occupational Safety and  
20 Health.

21 15. These experts (and approximately 20 others) have guided Amazon in developing  
22 our health and safety measures in response to the COVID-19 pandemic.

1           16.     Amazon has specifically consulted with Dr. Gupta and Dr. Lipkin concerning the  
2 health and safety procedures and protocols that Amazon either already has in place or intends to  
3 propose for a future potential manual National Labor Relations Board election at the BHM1  
4 facility in Bessemer, Alabama. Amazon is also willing to consult its other experts as Region 10  
5 of the Board (“Region 10”) deems necessary.

6           17.     In one example of Amazon working with its consultants on health and safety  
7 initiatives, Dr. Lipkin has provided the Amazon WHS Team with ongoing guidance and  
8 information regarding transmission risk; management of confirmed COVID-19 cases; contact  
9 tracing procedures; cleaning and sanitization measures; temperature checks and COVID-19  
10 symptom screening; and COVID-19 testing. Dr. Lipkin’s work also informed Amazon’s  
11 communications to associates about COVID-19. Further, Dr. Lindemann and Dr. Siren provided  
12 medical advice on Amazon’s strategies to mitigate the risk of COVID-19 transmission in the  
13 workplace. The Amazon WHS Team also engaged Drs. Maier, Gaffney, and Dotson from  
14 Cardno ChemRisk to complete toxicology reviews of certain cleaning and disinfecting products  
15 in order to ensure that the products are safe and to limit any risk to associates’ health from these  
16 enhanced cleaning measures.

17           18.     The Amazon WHS Team also engaged Apex Companies LLC (“Apex”) to  
18 provide industrial hygiene expertise and additional on-the-ground support as the Company  
19 implements and adjusts health and safety measures in response to new guidelines and best  
20 practices. Apex has provided advice, consultations, and feedback on multiple health and safety  
21 initiatives including, for example, temperature screening, mask usage, our disinfectant spraying  
22 program, and our pilot COVID-19 testing program for all associates.

1 **III. AMAZON HAS DEVELOPED INDUSTRY-LEADING HEALTH AND SAFETY**  
2 **PRACTICES IN RESPONSE TO THE COVID-19 PANDEMIC**

3 19. In close consultation with these leading medical and health experts, the Amazon  
4 WHS Team has adopted industry-leading health and safety measures at the Company's  
5 operations sites. In many instances, Amazon implemented health and safety measures before  
6 governments issued guidance calling for such steps, as well as measures more protective than  
7 what the guidance recommends. BHM1 was included in this adoption and implementation from  
8 the very start of its operations. One reason this occurred is because BHM1 opened in March  
9 2020 during the spring wave of COVID in the United States, and thus was opened as a "model  
10 COVID site." As a model site, BHM1 generally received and adopted all new Amazon anti-  
11 COVID protocols as soon as Amazon was able to create them.

12 20. In total, Amazon has made over 150 significant process changes at our operations  
13 sites, including BHM1, to help associates stay healthy, and we conduct daily audits of many of  
14 the measures we have put into place.

15 21. In total, Amazon incurred \$7.5 billion in COVID-related safety costs in the first  
16 three quarters of 2020, to accelerate procurement of COVID-19 protective supplies for our  
17 associates (including masks, gloves, hand sanitizer, and sanitizing wipes), other safety equipment  
18 (including thermal cameras, hand held thermometers, additional handwashing stations, and  
19 COVID-19 testing supplies), and enhanced cleaning and disinfecting (including more frequent  
20 cleaning by a larger janitorial staff and disinfectant spraying).

21 22. There has been one inspection of BHM1 to date from a regulator stemming from a  
22 COVID related complaint. On December 8, OSHA visited BHM1 due to such a complaint. This  
23 case is currently open, however no indications have been given to Amazon that there were  
24 COVID controls concerns stemming from the investigation.

1           A.     **Amazon Has Implemented Enhanced Cleaning and Disinfection Measures in**  
2                   **Our Facilities in Order to Maintain a Safe Work Environment**

3           23.     In response to the COVID-19 pandemic, Amazon has dramatically expanded its  
4     cleaning practices at all sites, including regular cleaning and disinfection of door handles,  
5     handrails, turnstiles, and other frequently touched areas.

6           24.     Amazon has added almost 200 high-contact surfaces to its regular cleaning and  
7     disinfection protocols and has significantly increased the frequency at which breakroom and  
8     restroom surfaces are cleaned so that they are cleaned six to eight times per shift, which is  
9     approximately every 75 minutes.

10          25.     In order to implement these enhanced cleaning and disinfection protocols,  
11     Amazon has significantly increased the size of the janitorial teams that clean our sites.

12          26.     Amazon also instructs all associates to clean and disinfect their workstations and  
13     tools and provides associates with appropriate and approved cleaning supplies and instructions to  
14     do so. For example, Amazon provides sanitizing wipes in dispensers located throughout our  
15     facilities, including BHM1. See Certification of (b) (6), (b) (7)(C), (b) (7)(A) (“(b) (6), (b) (7)(C) Certification”), ¶ 15(b).

16          27.     Associates are instructed to use these cleaning supplies to sanitize their work  
17     areas and tools, at the start and end of their shifts, and at an ongoing basis during working time.  
18     For example, Amazon has posted signs throughout our facilities, including BHM1, instructing  
19     associates to clean shared equipment before and after use. See generally, (b) (6), (b) (7)(C) Certification, ¶  
20     1.

21          28.     Amazon tailors its cleaning and disinfection measures to comply with guidance  
22     from CDC, OSHA, and the Alabama Department of Public Health (“ADPH”), which



1 recommends “routine” cleaning and disinfecting of workplaces and, in particular, frequently  
2 touched surfaces and equipment.<sup>1</sup> For example, the CDC defines “routine cleaning” as “the  
3 everyday cleaning practices that businesses and communities normally use to maintain a healthy  
4 environment,” and recommends that “[s]urfaces frequently touched by multiple people . . .  
5 should be cleaned with soap and water or another detergent at least daily when facilities are in  
6 use.”<sup>2</sup>

7         29. If a COVID-19 case (either a confirmed case or a presumptive case) is identified,  
8 Amazon confirms when and where the diagnosed associate was last on site in order to determine  
9 whether additional enhanced cleaning and disinfection (beyond the now-standard, enhanced  
10 cleaning protocols) is necessary. Amazon typically relies on combining information from  
11 interviews and on-site technology to make this determination. Specifically, Amazon evaluates  
12 where the diagnosed associate was in the building, for how long, how much time has passed  
13 since she or he was on site, and with whom the associate interacted, among other factors. If an  
14 associate informs Amazon of a COVID-19 diagnosis while he or she is on site, Amazon reviews  
15 where the associate has worked and closes off the associate’s workstations for additional  
16 enhanced cleaning and disinfection, consistent with CDC guidance.<sup>3</sup> In performing additional  
17 enhanced cleaning and disinfection, Amazon uses EPA-registered disinfectant products.

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<sup>1</sup> See CDC, *Coronavirus Disease 2019 (COVID-19): Interim Guidance for Businesses and Employers to Plan and Respond to Coronavirus Disease 2019 (COVID-19)*, May 2020 (updated Dec. 4, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>; OSHA, *Guidance on Preparing Workplaces for COVID-19*, at 9 (Mar. 16, 2020), <https://www.osha.gov/Publications/OSHA3990.pdf>; ADPH, *Public Health Guidance for Reopening* (updated Dec. 17, 2020), <https://www.alabamapublichealth.gov/covid19/guidance.html>.

<sup>2</sup> See CDC, *Frequently Asked Questions* (updated Dec. 11, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/general-business-faq.html#Cleaning-and-Disinfection-in-the-Workplace>

<sup>3</sup> See CDC, *Coronavirus Disease 2019 (COVID-19): Interim Guidance for Businesses and Employers to Plan and Respond to Coronavirus Disease 2019 (COVID-19)*, May 2020 (updated Dec. 4, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>

1           **B.     Amazon Conducts Daily Temperature Checks of All Associates to Quickly**  
2           **Identify and Address Potential Occurrences of COVID-19**

3           30.     To ensure that associates and others entering our facilities do not have an elevated  
4     temperature—a primary COVID-19 symptom that can be objectively measured—Amazon began  
5     daily on-site temperature checks at select sites in the United States on March 29, 2020.

6           31.     By the second week of April 2020, Amazon had expanded the temperature check  
7     program to all sites in North America. Amazon checks all associates' temperatures daily—  
8     hundreds of thousands of individuals daily—in order to reduce the chances that an associate with  
9     COVID-19 enters an Amazon facility and infects others at work.

10          32.     To conduct these temperature checks, Amazon has purchased more than 2,900  
11     thermal sensors and 31,000 hand-held thermometers. BHM1 is one of the sites that uses this  
12     equipment.

13          33.     Thermal cameras are used to conduct point of entry screenings for all persons  
14     entering the site. If an individual registers an elevated temperature—which is a temperature at or  
15     above 100.4 °F (or lower where required by state or local authorities)—then the person will be  
16     required to complete secondary screening in a follow-up area. This secondary screening is  
17     completed with a hand-held non-contact thermometer. If the secondary screening identifies an  
18     elevated temperature, the individual is instructed that they cannot enter the building and must go  
19     home. These thermal imaging devices are used daily at BHM1. See (b) (6), (b) (7)(C) Certification, ¶ 13.

20          34.     If an associate registers an elevated temperature, the associate is directed to go  
21     home and only return to work after she or he has gone three days (72 hours) without a fever, in  
22     line with CDC recommendations.<sup>4</sup> Associates registering an elevated temperature are given a

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<sup>4</sup> CDC, *When You Can Be Around Others After You Had or Likely Had COVID-19* (updated Dec. 1, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/end-home->

1 handout explaining that they should stay home until they are free of a fever for at least 72 hours  
2 without the use of fever-reducing medicines, they will receive up to five hours of pay for their  
3 scheduled shift.

4 35. If an associate develops other symptoms and is diagnosed with COVID-19,  
5 Amazon then follows its contact tracing procedures, derived from CDC guidelines, as described  
6 below.

7 36. Amazon was ahead of the curve with respect to our daily, mandatory temperature  
8 checks. The CDC's March 12, 2020 guidance suggested that workplaces "[c]onsider regular  
9 health checks . . . of staff and visitors entering buildings (if feasible)," including temperature  
10 checks. On April 8, 2020, the CDC issued guidance recommending temperature checks as one  
11 condition for permitting critical infrastructure workers to continue work following a potential  
12 exposure to COVID-19, but it still did not go so far as to recommend temperature checks for all  
13 individuals regardless of known exposure.<sup>5</sup> On May 6, 2020—approximately five weeks after  
14 Amazon implemented daily temperature screenings at select sites—the CDC issued guidance  
15 recommending that workplaces "consider conducting daily health in-person or virtual health  
16 checks," including temperature screening, of all employees.<sup>6</sup>

17 37. Amazon's daily temperature checks of all associates supplement our other  
18 measures encouraging associates to stay home and not come to work if they are feeling sick. For

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[isolation.html?CDC\\_AA\\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019%20-ncov%2Fprevent-getting-sick%2Fwhen-its-safe.html](https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/when-its-safe.html).

<sup>5</sup> CDC, *Interim Guidance for Implementing Safety Practices for Critical Infrastructure Workers Who May Have Had Exposure to a Person with Suspected or Confirmed COVID-19* (updated April 20, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/downloads/criticalworkers-implementing-safety-practices.pdf>.

<sup>6</sup> See CDC, *Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19)*, May 2020 (updated May 6, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>.

1 example, Amazon has posted signs at the entrances of our facilities, including BHM1 directing  
2 associates to go home if, among other things, they are displaying symptoms like coughing or  
3 shortness of breath. See generally, (b) (6), (b) (7)(C) Certification, ¶ 1-2.

4 **C. Amazon Provides Associates with Protective Supplies and Requires That All**  
5 **Associates Wear Masks**

6 38. Amazon provides disposable face masks and reusable face coverings that meet  
7 CDC guidelines to all associates, delivery service partners, Amazon Flex participants, and  
8 seasonal associates. Amazon has procured more than 151 million face masks, and requires that  
9 all associates, drivers, and support staff in our operations network wear face coverings or masks.  
10 Amazon has posted signs throughout our facilities to remind associates that face coverings are  
11 required and to instruct associates on how to correctly wear face coverings. Work gloves are  
12 commonly used at Amazon facilities, including BHM1, even before the pandemic. As of July 7,  
13 2020, Amazon had also distributed more than 64 million pairs of work gloves to our teams.  
14 This number has increased substantially since then.

15 39. Amazon provides additional appropriate protective supplies depending on an  
16 employee's role and task. For example, we provide first aid teams and those conducting  
17 temperature checks with hand held thermometers with nitrile medical gloves and medical grade  
18 masks. Amazon also stations temperature screeners who use hand held thermometers behind a  
19 plexiglass shield.

20 40. Amazon tracks gloves and mask usage and replenishes gloves and mask supplies  
21 on a regular basis, including at BHM1, and it instructs all associates to immediately notify  
22 management if gloves and masks are unavailable or supplies are close to running out.

1           **D.     Amazon Facilitates Frequent Hand-Washing by Providing Portable Wash**  
2           **Stations and Hand Sanitizer at Locations Throughout Our Facilities**

3           41.     All Amazon associates are instructed to wash their hands frequently with soap and  
4           water for at least twenty seconds, especially after going to the bathroom, before eating, and after  
5           blowing their nose, coughing, or sneezing. For example, Amazon posts signs throughout our  
6           facilities, including BHM1, encouraging associates to frequently wash and sanitize their hands.

7           See generally, (b) (6), (b) (7)(C), Certification, ¶ 1.

8           42.     Amazon has extended associates' regular break times to ensure associates have  
9           time to wash their hands. Amazon also allows associates to log out of their system to wash their  
10          hands whenever they choose, without any impact on their performance ratings.

11          43.     To facilitate frequent hand washing, Amazon has installed hand-sanitizer  
12          dispensers (containing hand sanitizer comprised of more than 60% alcohol, per CDC guidance<sup>7</sup>)  
13          throughout all of our facilities.

14          44.     All Amazon facilities, including BHM1, have hand sanitizer available for  
15          associates at each turnstile at all entrances and exits to the facility, and there are signs posted at  
16          the turnstiles directing associates to sanitize their hands as they pass through. See generally,  
17          (b) (6), (b) (7)(C), Certification, ¶ 1.

18          45.     In total, as of July 7, 2020, Amazon had distributed approximately 88 million  
19          ounces of hand sanitizer to our sites and deployed more than 450,000 canisters of disinfectant  
20          wipes, more than 50,000 hand sanitizer containers, and more than 20,000 wall mounted sanitizer  
21          refill containers. BHM1 was and continues to be a recipient of these supplies. This number has  
22          increased substantially since then.

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<sup>7</sup> See CDC, *Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19)*, May 2020 (updated Dec. 4, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>.



1           **E.     Amazon Implemented Structural Changes in Our Facilities to Allow for**  
2           **Appropriate Social Distancing**

3           46.     Amazon has made significant changes to the operations and layout of our  
4 facilities to allow for appropriate social distancing to limit the spread of COVID-19.

5           47.     The Amazon WHS Team has overseen structural changes of facilities in our  
6 fulfillment network so that associates can maintain appropriate distance when working. Some  
7 examples of such changes include: reducing the number of active workstations to ensure that  
8 associates can remain six feet apart, adding additional breakrooms and outdoor seating to  
9 minimize crowding during breaks, spreading out tables and chairs in breakrooms, converting  
10 certain areas in our facilities to one-way walking paths to avoid congestion, and adding  
11 directional and spatial markings throughout our fulfillment centers to indicate traffic direction  
12 and guide associates in maintaining appropriate social distance while they work.

13          48.     The Amazon WHS Team has also overseen numerous operational changes to  
14 further facilitate social distancing. Some examples of such changes include: staggering  
15 associates' shifts and breaks, replacing in-person "stand up" meetings<sup>8</sup> during shifts with  
16 information shared on mobile applications and broadcasts to employee workstations, suspending  
17 exit screening to minimize crowding near the exits at the end of shifts during some times in some  
18 localities, and cancelling all large events.

19          49.     At facilities like BHM1 that were opened during the COVID pandemic, the  
20 abovementioned structural and operational changes were mostly incorporated at the very  
21 beginning and were comparatively easy to adopt, in part because there was no "past practice  
22 before COVID."

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<sup>8</sup> In stand-up meetings, associates and supervisors address safety tips, success stories, and other information.

1           50.     To avoid crowding near time clocks, Amazon developed technology for  
2 associates to clock in and out at the start and end of their shifts via mobile applications on their  
3 phone. Specifically, Amazon added a “Clock Punch” feature to the “A to Z” employee portal, a  
4 self-service tool available online and on mobile devices. Amazon posted signs with instructions  
5 for using the new “Clock Punch” feature throughout our operations facilities to encourage  
6 associates to clock in and out through “A to Z.” See generally, (b) (6), (b) (7)(C) Certification, ¶ 1.

7           51.     To supplement these measures, the Amazon WHS Team created educational  
8 materials on COVID-19 hygiene and social distancing for associates in more than 20 different  
9 languages, which are posted throughout the operations facilities.

10          52.     Amazon also created an associate-led program to ensure that social distancing  
11 practices are followed throughout our facilities. The Amazon team designated associates at each  
12 of our fulfillment centers to serve as site leaders, called “Social Distancing Ambassadors,” who  
13 are dedicated to promoting social distancing throughout the site. This was an additional  
14 investment by Amazon to redeploy people from other jobs to make sure this coaching capability  
15 was present at all moments where congestion can occur at a site.

16          53.     Amazon’s social distancing measures are tailored to the CDC’s guidance, which  
17 recommends that employers “[i]ncrease physical space between employees at the worksite by  
18 modifying the workspace,” “rotate or stagger shifts to limit the number of employees in the  
19 workplace at the same time,” “[i]mplement flexible meeting . . . options,” and “[u]se signs, tape  
20 marks, or other visual cues . . . to indicate where to stand when physical barriers are not  
21 possible.”<sup>9</sup>

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<sup>9</sup> See CDC, *Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19)*, May 2020 (updated Dec. 4, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>.

1           **F.     Amazon Imposes A Strict Quarantine Procedure Following A Positive**  
2           **COVID-19 Diagnosis in Order to Protect the Health of Our Associates**

3           54.     Amazon instructs all associates feeling sick to stay home, self-monitor, seek  
4           assistance from a medical care provider, and report any symptoms or diagnosis to Amazon.  
5           Amazon has a partnership with Grand Rounds, which is a third-party medical provider that offers  
6           telehealth services. Amazon associates can receive telehealth consultations from Grand Rounds  
7           at no cost, and Grand Rounds' medical staff is available 24/7 to provide associates with up-to-  
8           the-minute support.

9           55.     If an associate is diagnosed with COVID-19, that individual is provided up to 14  
10          days of paid time off and not permitted to return to work until they satisfy the following  
11          minimum requirements, which are derived from CDC guidance. If the diagnosed associate is  
12          symptomatic, the associate cannot return to work until: (1) at least ten days have passed since the  
13          first appearance of the associate's first symptoms, (2) the associate has not had a fever for at least  
14          three full days (72 hours) without the use of fever-reducing medicine, and (3) the associate's  
15          other symptoms (e.g., cough or shortness of breath) have resolved. If the diagnosed associate is  
16          asymptomatic, the associate cannot return to work until ten days have passed since the date of his  
17          or her first positive COVID-19 laboratory test. If the associate developed symptoms during the  
18          ten days after his or her COVID-19 laboratory test, then the associate is instructed to follow the  
19          return-to-work guidance for symptomatic COVID-19 cases, as described above.<sup>10</sup>

20          56.     Amazon regularly notifies associates about confirmed positive diagnoses of  
21          individuals (COVID-19 cases) who work at their site (but not the identity of the individuals

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<sup>10</sup> See CDC, *Coronavirus Disease 2019 (COVID-19): Discontinuation of Isolation for Persons with COVID-19 Not in Healthcare Settings (Interim Guidance)* (updated Dec. 3, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html>.

1 diagnosed, in line with guidance from the CDC and the U.S. Equal Employment Opportunity  
2 Commission<sup>11</sup>)—either through small-group, in-person discussions with management that  
3 comply with social distancing guidelines, text notifications, or its “A to Z” application.

4 57. In addition, following a confirmed COVID-19 case, Amazon completes “contact  
5 tracing” to identify associates who were in close contact with the diagnosed individual.

6 58. Amazon has been completing contract tracing since February 2020, and  
7 formalized the process into a Global Case Management Policy as of March 20, 2020. From the  
8 outset, Amazon’s policy has been that contact tracing should commence two days (48 hours)  
9 prior to the date of the diagnosed associate’s first symptoms and should end on the last day that  
10 the diagnosed associate was on site. On or about June 23, 2020, Amazon’s policy was further  
11 revised to reflect new CDC guidance on asymptomatic cases, which guidance requires contact  
12 tracing to be commenced two days prior to the laboratory test date.<sup>12</sup>

13 59. Under Amazon’s current policy, Amazon identifies associates in close contact  
14 with the diagnosed associate during the 48 hours prior the diagnosed associate’s first symptoms  
15 (if the diagnosed associate is symptomatic) or during the 48 hours before the laboratory test date  
16 (if the diagnosed associate is asymptomatic). Per CDC guidance, Amazon defines “Close  
17 Contact” as having a single or multiple interactions within 6 feet, or 2 meters, of a COVID-19  
18 case where the interaction(s) resulted in a total (cumulative) of 15 minutes or more with another

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<sup>11</sup> EEOC, *What You Should Know About COVID-19 and the ADA, the Rehabilitation Act, and Other EEO Laws* (updated Dec. 16, 2020), <https://www.eeoc.gov/wysk/what-you-should-know-about-covid-19-and-ada-rehabilitation-act-and-other-eeo-laws>; See CDC, *Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19)*, May 2020 (updated Dec. 4, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>.

<sup>12</sup> See CDC, *Health Departments: Interim Guidance on Developing a COVID-19 Case Investigation & Contact Tracing Guidance: Investigating a COVID-19 Case* (updated Nov. 23, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/investigating-covid-19-case.html>.

1 person over a 24 hour period.<sup>13</sup> Amazon conducts contact tracing by interviewing the diagnosed  
2 associate about, among other things, whether the associate recalls having close contact with  
3 anyone who works at an Amazon facility. The scope of Amazon's contact tracing currently  
4 includes identifying close contacts on site, as well as identifying associates who have carpooled  
5 with a diagnosed associate and associates who co-habitate with a diagnosed associate. Closed-  
6 circuit television monitoring video (where available) is also used for contact tracing where  
7 further information is needed.

8         60. If the team conducting the contact tracing has any follow up questions or areas of  
9 concern, they will contact again the associate who was diagnosed with COVID-19. Amazon  
10 informs all associates who were in Close Contact with the diagnosed associate that they were  
11 potentially exposed to someone diagnosed with COVID-19 (but not the identity of the individual  
12 diagnosed), and places those associates on paid leave until 14 days after their last contact with  
13 the diagnosed individual have elapsed. This COVID-related paid time off does not count against  
14 the associates' paid and unpaid time-off accruals. Amazon instructs these associates to stay home  
15 to self-quarantine and to not return to their work site, to watch for symptoms, and to seek  
16 medical attention if they experience any symptoms.

17         61. The Amazon WHS Team created our quarantine protocols to comply with  
18 recommendations from health and safety regulators, including the CDC, OSHA, and the ADPH.

19         62. OSHA guidance, for example, emphasizes that "[p]rompt identification and  
20 isolation of potentially infectious individuals is a critical step in protecting workers, customers,

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<sup>13</sup> See CDC, *Public Health Guidance for Community-Related Exposure* (updated Dec. 3, 2020),  
<https://www.cdc.gov/coronavirus/2019-ncov/php/public-health-recommendations.html>.



visitors, and others at a worksite.”<sup>14</sup> CDC guidelines similarly recommend that employers “[d]etermine which employees may have been exposed to the virus and may need to take additional precautions” and “[i]nform employees of their possible exposure to COVID-19.”<sup>15</sup>

63. In addition to implementing our own contact tracing procedures, Amazon proactively reaches out to local health authorities to advise of confirmed COVID-19 cases and to ensure alignment in definition of “close contacts.”

#### IV. AMAZON ASSOCIATES USE TWO-WAY DIRECT COMMUNICATION ABOUT HEALTH AND SAFETY MEASURES WITH AMAZON

64. Amazon has always encouraged associates to raise health and safety concerns and to report non-compliance, including throughout the COVID-19 pandemic. Amazon welcomes these reports and has a zero tolerance policy for any retaliation relating to raising these concerns. Amazon investigates allegations of retaliation and takes corrective action where warranted.

65. Amazon takes associate feedback very seriously and believes two-way, direct communication through a variety of channel options is imperative for successfully preventing the spread of COVID-19.

66. For example, we use a daily employee opinion survey, called “Connections,” to seek anonymous employee feedback about the effectiveness and consistency of our safety practices. Between March 23, 2020 and December 23, 2020, more than two million unique associates (2.04 million) provided over 162.1 million responses to COVID-related Connections questions.

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<sup>14</sup> OSHA, *Guidance and Preparing Workplaces for COVID-19*, at 9 (Mar. 16, 2020), <https://www.osha.gov/Publications/OSHA3990.pdf>.

<sup>15</sup> See CDC, *Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19)*, May 2020 (updated Dec. 4, 2020), <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html#more-changes>.

1           67.     The questions in the Connections surveys cover topics such as social distancing  
2     compliance, proper facemask use, and the availability of sanitation supplies. Daily employee  
3     feedback on these issues has enabled us to quickly identify and help sites that needed additional  
4     support and to zoom in on areas of concern.

5           68.     Amazon also has an open door policy with our associates. If our associates have  
6     concerns or ideas on how the company can improve its response to COVID-19, they are  
7     encouraged to go directly to their managers or HR.

8           69.     In this regard, if any associates have identified any potentially relevant health and  
9     safety measures that would be helpful for holding a manual Board election at BHM1, Amazon  
10    will consider and potentially implement those suggestions, consistent with its well established  
11    past practice.

12          70.     Finally, should the Retail Wholesale and Department Store Union wish to make  
13    any medically and epidemiologically sound and advisable suggestions concerning health and  
14    safety procedures at BHM1 for a manual election, Amazon is willing to consider and potentially  
15    implement such suggestions.

16    V.     **AMAZON CONTINUES TO DEVELOP NEW AND INNOVATIVE HEALTH**  
17           **AND SAFETY MEASURES**

18          71.     Amazon continues to look for new ways to protect our associates and has  
19    consulted with leading medical experts about developing additional health and safety measures.

20          72.     For example, Amazon is piloting regular COVID-19 testing of all associates,  
21    including those showing no symptoms, and has built our own lab to process COVID-19 tests. A  
22    team of Amazon employees—from research scientists and program managers to procurement  
23    specialists and software engineers—has moved from their normal day jobs to a dedicated team

1 working to build COVID-19 testing capacity. Amazon will spend \$1 billion on developing  
2 COVID-19 testing capacity throughout 2020.

3 73. Amazon has also used technology to enhance our mitigation efforts.

4 74. For example, Amazon has developed a social distancing tracking system,  
5 “Distance Assistant,” which provides associates with live feedback on social distancing through  
6 a 50-inch monitor, a camera, and a local computing device. As associates walk past the camera, a  
7 monitor displays live video with on-screen visual indicators to show if associates are within six  
8 feet of one another. Amazon also announced that the software and artificial intelligence behind  
9 this innovation is available via open source so that individuals and businesses can download the  
10 package at no cost and create their own Distance Assistant. To date, Amazon has deployed 5088  
11 Distance Assistant units at 1345 sites, in addition to offering it open-source to other companies  
12 who wish to use it. Although I understand that the Distance Assistant will not be used in the  
13 immediate voting area, the Distance Assistant would help notify any employees in line to vote to  
14 maintain a proper social distance. See [https://app.criticalmention.com/app/#clip/view/83e3ecf5-](https://app.criticalmention.com/app/#clip/view/83e3ecf5-040f-4c02-aaba-b587bba42d3a?token=2d765cbb-f627-45e5-ab16-446b2dd677db)  
15 [040f-4c02-aaba-b587bba42d3a?token=2d765cbb-f627-45e5-ab16-446b2dd677db](https://app.criticalmention.com/app/#clip/view/83e3ecf5-040f-4c02-aaba-b587bba42d3a?token=2d765cbb-f627-45e5-ab16-446b2dd677db) (ABC  
16 Nightline segment on Amazon operations; Distance Assistant is demonstrated at 2:35-2:43);  
17 Exhibits 13-14 to Certification of Joe (b) (6), (b) (7)(C) (photos of Distance Assistant in action).

18 75. Amazon is further willing to explore the potential implementation of any other  
19 new technologies during the manual election in order to ensure a safety process for all  
20 participants.

1 **VI. AMAZON WILL FULLY UTILIZE ITS VAST NETWORK OF SAFETY**  
2 **RESOURCES, PERSONNEL, AND EXPERTISE DISCUSSED ABOVE TO**  
3 **EFFECTIVELY IMPLEMENT COMPREHENSIVE SAFETY PROCEDURES**  
4 **FOR A MANUAL ELECTION AT BHM1.**

5 76. To my knowledge, over the course of the COVID-19 pandemic, Amazon has  
6 shouldered a larger responsibility to implement safety measures than any other company, based  
7 on the more than one million associates Amazon employs worldwide—and we have met that  
8 challenge through measures that prevent the virus from spreading at our sites, and the WHS  
9 Team personnel, medical experts, consultants, in-house software and solution development  
10 resources, who create, monitor, and continuously improve those measures.

11 77. As described in detail above, Amazon has partnered with health experts,  
12 leveraged new technologies, and invested significant time and resources developing and  
13 implementing safety procedures that comply with, or exceed, state and federal guidelines.

14 78. Amazon will devote its vast network of safety resources, personnel and expertise  
15 that I have covered in paragraphs 4 through 77, above, to ensure that all possible effective health  
16 and safety measures are considered and/or implemented for a manual election at BHM1.

17 79. I have reviewed the (b) (6), (b) (7)(C) Certification and affirm that Amazon has or will  
18 implement all measures and protocols at BHM1 discussed therein, including but not limited to all  
19 the optional measures and protocols left open to the choice of Region 10. In addition, Amazon  
20 maintains a global network of commercially saleable health- and safety-related products, due to  
21 the nature of its business. As such, Amazon either already owns – or can quickly access – all of  
22 the health and safety materiel identified in the (b) (6), (b) (7)(C) Certification.

23 80. In short, Amazon will make the health and safety of a manual election at BHM1  
24 its top priority and will engage its nearly 4,000 WHS Team associates to make sure that it has all  
25 possible effective health and safety measures in place.

I declare under penalty of perjury that the above is true and correct to the best of my knowledge, information, and belief.


1

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Executed on December 28, 2020

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4

  
Mike Stone



**AMAZON.COM SERVICES LLC**

Employer,

and

# RETAIL, WHOLESALE AND DEPARTMENT STORE UNION

Petitioner.

Case No. 10-RC-269250

**CERTIFICATION OF DR. VIN GUPTA**

1. I currently am an Affiliate Assistant Professor of Health Metrics Sciences at the Institute for Health Metrics and Evaluation at the University of Washington. I am a pulmonary and critical care medicine physician by training. I have been caring for critically ill COVID-19 patients since the early days of the outbreak in Seattle.

2. Prior to these current roles at University of Washington, I was a full-time Assistant Professor with the Institute for Health Metrics and Evaluation (IHME) and the Department of Health Metrics Sciences (HMS) from 2018-2020. During this time, I helped lead a large research portfolio examining the global burden of non-communicable diseases using the most advanced epidemiologic methods.

3. In addition to these roles, I am also a deployable critical care physician for the US Air Force Medical Corps Reserves, medical contributor for MSNBC and NBC News, and term member of the Council on Foreign Relations.

4. I received my BA from Princeton, MD from Columbia University's Vagelos College of Physicians & Surgeons, Master's in International Relations from the University of

1 Cambridge, and Master's in Public Administration from the Kennedy School of Government at  
2 Harvard. I have published numerous articles in medical journals relating to public health.

3 5. My full Curriculum Vitae is attached as current from September 2020.

4 6. Recently, I have consulted with Amazon on its Amazon Care program. Amazon  
5 Care is a virtual medical clinic for Amazon employees based near its Seattle offices; through the  
6 Amazon Care application employees get virtual health advice and medical visits. I am a  
7 Principal Scientist employed at Amazon providing clinical and strategic leadership to the  
8 company's internal and external COVID-19 response work, including overseeing the funding of  
9 clinical trials, expanding its work in public health through community-based initiatives, and  
10 ensuring the implementation of evidenced-based workplace health and safety protocols.

11 7. I have experience advising individuals and entities with respect to COVID-19.

12 8. I regularly speak at webinars, including the American Asthma and Allergy  
13 Foundation of America, and news outlets, including NBC's Today show, CNBC, and many  
14 others, about COVID-19, including about how COVID-19 is transmitted, how to reduce the  
15 spread of the virus, and the efficacy of the new vaccines, among other topics.

16 9. I also recently assisted a cross-sectoral team stand up the Seattle Coronavirus  
17 Assessment Network, the nation's first effort to scale home-testing for COVID-19.

18 10. My background in public health has focused on epidemic preparedness, with  
19 relevant roles at the US Center for Disease Controls Emerging Infections Program, the World  
20 Bank's Pandemic Emergency Financing Facility, the China CDC, and the Pentagon's Center for  
21 Global Health Engagement.

22 11. I have reviewed the Amazon-proposed logistics and safety protocols as set forth  
23 in (b) (6), (b) (7)(C), (b) (7)(A) certification as it relates to the various aspects of conducting a safe union election

1 for all participants, including the Board agents, observers and voters. In my expert medical  
2 opinion, the voting protocol as designed, along with the high degree of COVID risk prevention  
3 protocols already in place at the Fulfillment Center, mitigates any marginal risk associated with  
4 participating in an in-person election for anyone participating in the election process from voters  
5 to observers to NLRB personnel. The protocols proposed by the Company align with all CDC,  
6 State of Alabama, and Infectious Disease Society of America recommended COVID protocols  
7 for the gathering of individuals for any event, including in-person elections. In fact, the proposal  
8 to limit the number of individuals in the voting area, an open-air area consisting of  
9 approximately 3,600 square feet to no more than twenty individuals, and to mandate social  
10 distancing and masking for individuals in the line to enter the area, in an open air tent is even  
11 more restrictive than guidelines in the State of Alabama which imposes no restrictions other than  
12 masking at an outdoor gathering. See (b)(6), (b)(7)(C) Certification, ¶ 55-57.

13 12. While there is no way to ensure zero risk of COVID-19 infection in relation to  
14 any public activity, the measures Amazon proposes to protect individuals and reduce the spread  
15 of COVID-19 have made the risk of transmission during the election negligible.

16 13. COVID is primarily transmitted via respiratory droplets from an infected  
17 individual, whether symptomatic or not, to another individual. The secretions come from the  
18 nose or mouth and transmission may occur when infectious respiratory droplets are deposited on  
19 the mucus membranes in the nose, eyes, or mouth of a non-infected individual. The utilization  
20 of social distancing, time limiting exposure to others, proper hand washing and hygiene, the  
21 donning of surgical masks which cover the mouth and nose, the wearing of goggles or a face  
22 shield to protect the eyes, and the flow of fresh air, protect individuals from transmission thereby

1 eliminating risk to others. One cannot look at the risk, without also reviewing the risk mitigation  
2 efforts.

3 14. In my opinion, participating in the election at the Bessemer site as proposed by  
4 Amazon would be of lesser risk than if an individual entered an uncontrolled setting to pick up a  
5 curbside meal, went to a grocery store, pumped gasoline, or, most likely, a federal government  
6 office that is not subject to the strict protocols that Amazon follows and which would be  
7 implemented for the election. This is true even accounting for proper masking by the general  
8 public and the maintaining of social distancing.

9 15. I have reviewed Amazon's proposal as it relates to safeguarding the Board agents  
10 conducting the election by structuring a means in which their environment can remain  
11 continuously as safe as possible as the travel, lodge, dine and conduct the election. The plan is  
12 akin to creating a "moving safe zone" concept, similar to the "bubble" concept that several  
13 professional sports leagues have successfully implemented, that makes the environment  
14 extraordinarily safe with regard to COVID-19 transmission and risk in comparison to an  
15 uncontrolled public setting. *See generally* (b) (6), (b) (7)(C) Certification, ¶¶ 55-75. If the Board agents  
16 adhere to the guidelines established in the Company's protocols, for example utilizing personal  
17 protective equipment, eating meals alone, maintaining social distancing while traveling, having  
18 their lodging deep cleaned prior to use and not permitting any entrants into their rooms, the risk  
19 of COVID-19 transmission is minimal.

20 16. As it relates to the Board agents actually conducting the election, Amazon's  
21 proposed plan, described in (b) (6), (b) (7)(C), (b) (7)(D) Certification, ¶¶ 55-75, is suitably designed to minimize  
22 COVID-19 transmission risk to the fullest extent that is reasonably feasible, for example:

- Having a low number of observers involved who are standing at least 6+ feet away from the Board agents at all times, all of whom are all masked, with gloves and face shields.
- High quality hand sanitizing is encouraged after degloving (with soap and water for at least 20 seconds or with a synthetic product that contains at least 70% ethyl alcohol).
- Having voters queue in a social distanced line as they approach the open-air voting tent and having them maintain 6+ feet from the observers and Board agents.
- Having impermeable Plexiglass dividing the observers from each other and the voters and providing the same for the Board agents.

17. These measures alone, when universally followed, provide a safe environment.

However, the Company's protocols, go further, including:

- Having all voters be properly masked and screened for COVID-19 prior to nearing the voting tent location, including going through all of the normal protocols through which they go prior to entering the Fulfillment Center. See (b) (6), (b) (7)(C) Certification, ¶65.
- Having the communications between the Board agents and the observers occur via walkie talkies. See (b) (6), (b) (7)(C) Certification, ¶64.
- Having the Board agent provide the ballot to the voter in a socially distanced contactless manner by utilizing a pass thru mechanism whereby the Board agent opens one side of the box, deposits the ballot, closes the box, and then the voter opens their side of the box and retrieves the ballot. See (b) (6), (b) (7)(C) Certification, ¶59.
- Having individual "restroom trailers" for each Board agent. See (b) (6), (b) (7)(C) Certification, ¶68(i)



- Having food delivered in a contactless manner in containers that are sanitized and having that food consumed on an individual basis at sanitized and socially distanced tables. *See* [REDACTED] Certification, ¶69.

18. It is my opinion that Amazon's proposals for the election minimizes fully the risk of COVID-19 transmission to the observers. They will be 6+ feet from others at all times – will be gloved and properly masked. Additionally, Amazon will make a face shield available to any observer that would like them as well. While this is beyond any PPE requirement, Amazon is willing to provide to them to make the parties feel more comfortable. Amazon's proposed use of impermeable Plexiglass around the observers and agents would practically eliminate the chance for transmission among those individuals. This activity is far safer than a normal public activity given these safety precautions.

19. The voting area is particularly appropriate because it provides for an open-air, but protected, area for voters and non-team members. Given the size and layout of the tents, more individuals could safely fit into the area at one time, but for an even higher degree of caution, I agree with the protocols that permit no greater than twenty individuals inside the tent at any one time in order to maintain appropriate social distancing. I also understand that if the Board or the Union have concerns about the current tenting proposal that Amazon has capacity to add additional space to meet those concerns.

20. Finally, Amazon's proposals for the election provide the safest environment that is reasonably possible for voters presenting a negligible risk of COVID-19 transmission. The voters will be properly masked and standing 6+ feet away from any individual at any time. They will be temperature checked, given a symptom check, i.e. questionnaire, and have their hands sanitized. *See generally* [REDACTED] Certification, ¶65, 68(b). They will utilize single-use pencils and

1 have antibacterial wipes to use on the ballot booth. See (b) (6), (b) (7)(C) Certification, ¶69(e). Amazon's  
2 proposal will eliminate all close contact by any participants in the election and in the event any  
3 such contact occurred it would be so brief in nature so as to largely eliminate any opportunity for  
4 transmission of COVID. I note that the voters have been coming to work since the beginning of  
5 the pandemic and continue to do so on a daily basis. There would be no increased risk for the  
6 team members participating in the election under the protocols proposed and, most likely, they  
7 will work their regular shifts before or after voting.

8 21. In sum, Amazon's proposed election logistics would create a safe environment.  
9 These protocols are at least as safe as those used in the recent U.S. Presidential election in  
10 Alabama, and they extend beyond any recommendations by the CDC in terms of public safety.  
11 The overall risk of COVID-19 transmission given these protocols would be far less than going to  
12 a supermarket, an office building, a doctor's appointment, or a religious ceremony or, most  
13 likely, an NLRB office. Further, it is far less risky as it relates to COVID-19 contraction in  
14 comparison to many activities currently permitted by Alabama's Stay at Home Order, such as  
15 going to a gym, movie theatre, or bowling alley. Amazon's proposal to have the election  
16 outdoors in an open-air tent is the safest possible reasonable option for choosing an environment  
17 for conducting the election. Its proposed mandating of social distancing, marking six-foot  
18 separations on the ground, and the use of universal masking and hand cleaning will all greatly  
19 reduce any risk of transmission of COVID during the vote.

20 22. Given the logistics and safety protocols in Amazon's proposal, there is no  
21 material increased risk in transmission of COVID-19 due to the fact that approximately 5,000  
22 individuals may participate in the election as compared to a relatively smaller number of  
23 individuals.

23. In my expert medical opinion, the voting protocol as designed, along with the high degree of COVID risk prevention protocols already in place at the applicable property, mitigates any marginal risk associated with participating in an in-person election for anyone participating in the election process, including employees, observers, and NLRB personnel.

24. There is no general definition of an outbreak. If an employer had a test positivity rate of at least 3% or greater in a workplace, additional interventions would be necessitated.

25. Similarly, although COVID-19 positivity rates have been increasing since the Thanksgiving holiday, numerous models as reported by the CDC predict that the cases in Alabama will be at a lower number than they are today on January 1.

<https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/forecasts-cases.html>. Based on my study of positivity rates over the entire pandemic and the recent surge based on individual's holiday-related gatherings, I would expect that rates will decrease significantly beginning in mid-January, 14 days after the New Year's holiday when individuals are likely to cease participate in celebratory and family gatherings and return to their pre-Thanksgiving activities. As a result, on or after January 15, I anticipate that the COVID-19 related transmission numbers to return to the levels that we were seeing in mid-October, significantly lower than current numbers.

26. It is my medical opinion that participation in the election as proposed generates no increased risk for any associate, observer, or NLRB personnel or non-associate that leave their homes to shop in grocery stores, to pick up prescriptions, to take their children to soccer practice, participate in outdoor dining, or any other routine life activities under the circumstances as currently exist with regards to COVID rates and transmission.

I declare under penalty of perjury that the above is true and correct to the best of my knowledge, information, and belief.

Executed on: December 28, 2020

E-SIGNED by Dr. Vin Gupta, MD, MPA

---

Dr. Vin Gupta, MD, MPA

**AMAZON.COM SERVICES LLC**

Employer,

and

# RETAIL, WHOLESALE AND DEPARTMENT STORE UNION

Petitioner.

Case No. 10-RC-269250

**CERTIFICATION OF DR. W. IAN LIPKIN**

1. I am currently the John Snow Professor of Epidemiology, Professor of Neurology and Pathology and Cell Biology, and Director of the Center for Infection and Immunity at Columbia University. I am also a member of the World Health Organization Global Outbreak Alert and Response Network, which exists to assist countries with disease control efforts by ensuring rapid and appropriate technical support to affected populations, investigate and characterize events and assess risks of rapidly emerging epidemic disease threats, and support national outbreak preparedness by ensuring that responses contribute to sustained containment of epidemic threats. I have significant expertise dealing with infectious diseases throughout the world, including the 2003 SARS outbreak and now, the COVID-19 pandemic.

2. Specifically, I have over 30 years of experience in diagnostics, microbial discovery and outbreak response, have mentored and trained more than 30 students and post-doctoral fellows and lead a team of over 65 investigators, post-doctoral fellows and research and support staff in New York City and another 150 across the world. In the 1980s, I identified AIDS-associated immunological abnormalities and inflammatory neuropathy. I was the first to



1 use purely molecular methods to identify an infectious agent, developed MassTag PCR and  
2 GreeneChip technology and pioneered the use of high throughput sequencing in pathogen  
3 discovery. I and my team implicated West Nile virus as the cause of the encephalitis epidemic in  
4 New York in 1999 and discovered or characterized more than 1500 infectious agents including  
5 Borna disease virus, West Nile virus, LuJo virus and human rhinovirus C. I assisted the WHO  
6 and the Peoples Republic of China during the 2003 SARS outbreak, advised the Kingdom of  
7 Saudi Arabia in addressing the challenge of MERS, and again advised the Peoples Republic of  
8 China during the current COVID-19 pandemic.

9 3. With respect to COVID-19, since the pandemic began, my team and I have  
10 developed PCR and antibody tests, and run clinical trials of convalescent plasma in New York  
11 City and Rio de Janeiro. I have also served as a testing advisor for New York City, part of a  
12 team of experts who spearheaded the opening last month of a new coronavirus testing laboratory  
13 in New York City that seeks to process around 20,000 daily diagnostic tests.

14 4. I have been featured by the New York Times, the Los Angeles Times, Discover  
15 Magazine, Nature Medicine, the History Channel, National Geographic, CNN, Fox, National  
16 Public Radio, Wired, Newsweek, and the Huffington Post on matters related to various infectious  
17 outbreaks across the world, including the COVID-19 pandemic.

18 5. My full Curriculum Vitae is attached.

19 6. Since the pandemic began, I have consulted with Amazon in development of  
20 Amazon's response to the COVID-19 pandemic and development of health and safety protocols  
21 to minimize the risk of transmission of the COVID-19 virus in their workplaces.

22 7. I have reviewed and contributed to Amazon's proposed logistics and safety  
23 protocols as set forth in (b) (6), (b) (7)(C), (b) (7)(A) certification. The COVID risk prevention protocols already

1 in place at the Fulfillment Center and the proposed election protocols are designed to mitigate  
2 risk associated with participating in an in-person election for anyone participating in the election  
3 process, including the employee voters, observers, and board agents.

4 8. Based on my review of the proposed logistics and safety protocols as further  
5 described in (b) (6), (b) (7)(C), (b) (7)(A) certification, it is my medical opinion that these protocols should  
6 protect participants from becoming infected as a consequence of attending the election. I have  
7 no additional recommendations for reducing the risk further.

8 9. As to the employee voters, they have been coming to work since the beginning of  
9 the pandemic and will continue to do so. There would be minimal increased risk for the voters  
10 under the proposed protocols and, most likely, they would work their regular shifts before or  
11 after voting.

12  
I declare under penalty of perjury that the above is true and correct to the best of my  
knowledge, information, and belief.

Executed on: December 28, 2020

At: New York, New York

[signature to be filed separately]  
Dr. W. Ian Lipkin, MD

**UNITED STATES OF AMERICA  
BEFORE THE NATIONAL LABOR RELATIONS BOARD  
REGION 10**

AMAZON.COM SERVICES LLC	)	
	)	
	)	
Employer,	)	
	)	
and	)	Case No. 10-RC-269250
	)	
RETAIL, WHOLESALE AND	)	
DEPARTMENT STORE UNION	)	
	)	
Petitioner.	)	
	)	

**NOTICE OF ADDENDA TO THE EMPLOYER’S OFFER OF PROOF**

The Employer, Amazon.com Services LLC (“Amazon”), submits the following addendums to the Employer’s Offer of Proof Concerning Manual Election at BHM1 (“Offer of Proof”), which the Employer electronically filed and served on December 28, 2020.

Exhibit 1 contains Dr. Vin Gupta’s curriculum vitae, which is referenced in paragraph 5 of Dr. Gupta’s certification but was unintentionally omitted from the filed Offer of Proof.

Exhibit 2 contains Dr. W. Ian Lipkin’s curriculum vitae, which is referenced in paragraph 5 of Dr. Lipkin’s certification but was unintentionally omitted from the filed Offer of Proof.

Exhibit 3 contains Dr. Lipkin’s signed certification. The Employer submitted an unsigned version of the certification as part of its original filing on December 28, 2020. The signed version of the certification in Exhibit 3 to this Notice of Addenda contains minor revisions to paragraphs 7 through 9 of the certification. A redline copy of Dr. Lipkin’s certification, which indicates the changes made, is attached as Exhibit 4.

Dated: December 29, 2020

Respectfully submitted,

/s/ Harry I. Johnson

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*Counsel for the Employer,  
Amazon.com Services LLC*

### **CERTIFICATE OF SERVICE**

I certify that a true and correct copy of the Notice of Addenda to the Employer's Offer of Proof was filed today, December 29, 2020, using the NLRB's e-Filing system and was served by email upon the following:

George N. Davies  
Richard P. Rouco  
Attorney for Petitioner  
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Lisa Henderson  
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Kerstin Meyers  
Field Attorney, Region 10  
[kerstin.meyers@nlrb.gov](mailto:kerstin.meyers@nlrb.gov)

/s/ Geoffrey J. Rosenthal  
Geoffrey J. Rosenthal



# **EXHIBIT 1**

**Vin Gupta, M.D., M.St, M.PA**335 NW 46<sup>th</sup> Street, Seattle, WA 98107[vgupta@uw.edu](mailto:vgupta@uw.edu) | <http://www.healthdata.org/about/vin-gupta>

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**EDUCATION:**2017 Master in Public Administration;  
Concentration in Global Public Health**HARVARD UNIVERSITY,  
John F. Kennedy School of Government**  
Cambridge, MA

2015 Master in International Relations

**UNIVERSITY OF CAMBRIDGE**  
Cambridge, United Kingdom

2015 Commissioned Officer Training

**AIR UNIVERSITY**  
**Dept. of the United States Air Force**  
Montgomery, Alabama

2011 Doctor of Medicine

**COLUMBIA UNIVERSITY,  
College of Physicians & Surgeons**  
New York, NY

2005 Bachelor of Arts

**PRINCETON UNIVERSITY**  
Princeton, NJ**POST-DOCTORAL TRAINING:**

2017 Program in Clinical Effectiveness

**HARVARD T.H. CHAN SCHOOL OF PUBLIC  
HEALTH, Boston, MA**2014- Clinical Fellowship in Pulmonary & Critical Care  
2017 Medicine**BRIGHAM & WOMEN'S HOSPITAL**  
Boston, MA2011- Clinical Residency in Internal Medicine  
2014**UNIVERSITY OF WASHINGTON  
MEDICAL CENTER**  
Seattle, WA**FACULTY ACADEMIC APPOINTMENTS:**

2018- Assistant Professor of Global Health

**INSTITUTE FOR HEALTH METRICS AND  
EVALUATION**  
Seattle, WA

2018- Affiliate Instructor

**DIVISION OF GLOBAL HEALTH EQUITY  
BRIGHAM & WOMEN'S HOSPITAL**

2017- Adjunct Lecturer in International Development

**MASSACHUSETTS INSTITUTE OF  
TECHNOLOGY**  
Cambridge, MA2017- Instructor in Medicine  
2018**HARVARD MEDICAL SCHOOL**

2015- Director of Global Health Diplomacy &amp; Security

**HARVARD GLOBAL HEALTH INSTITUTE**

2018

**OTHER PROFESSIONAL APPOINTMENTS:**

2018-	Term Member	<b>COUNCIL ON FOREIGN RELATIONS</b> New York, NY
2018-	Non-Resident Fellow	<b>CENTER FOR GLOBAL DEVELOPMENT</b> Washington, D.C.
2012-	Major (O-4) and Critical Care Air Transport Physician	<b>UNITED STATES AIR FORCE RESERVES MEDICAL CORPS</b> Worldwide Locations

**PUBLIC HEALTH WORK EXPERIENCE:**

2020-	<b>AMAZON, INC SENIOR COVID-19 MEDICAL OFFICER</b> <ul style="list-style-type: none"><li>• Provide medical and scientific oversight on the company's efforts in scaling approaches to COVID-19 testing to its &gt; 2million employee base globally, including the development of testing protocols in fulfillment centers worldwide, on-site vaccination clinics, initiation of mitigation efforts, and public-facing engagement with third party organizations, including regulators and elected officials. Lead crisis communication response in coordination with PR as COVID-19 realities have demanded.</li></ul>
2019 -	<b>NBC AND MSNBC MEDICAL CORRESPONDENT</b> <ul style="list-style-type: none"><li>• Serve as one of NBC and MSNBC's primary public health and medical experts for all news programming; often relied upon to help explain new study findings and answer view questions related to COVID-19, among other topic areas in public health, including vaping, the opioid crisis, and issues related to healthcare reform. This work includes frequent appearances on the TODAY show and primetime networking across both outlets.</li></ul>
2019	<b>APPLE, INC.</b> <ul style="list-style-type: none"><li>• Paid, part-time consultant for the Apple Clinical Health team, helping to guide design features for the Apple Watch to be usable for patients with chronic respiratory diseases</li></ul>
2019-	<b>WORLD HEALTH ORGANIZATION</b> <b>Consultant, Digital Health Department</b> <ul style="list-style-type: none"><li>• In coordination with Chief Scientist, Dr. Soumya Swaminathan, and Chief Information Officer, Mr. Bernardo Mariano, helping to found the WHO's Digital Health Department. Currently focused on developing a global strategy to provide guidance to member states on the appropriate uptake and implementation of digital health interventions within their respective health systems.</li></ul>
2018-2019	<b>WORLD BANK GROUP</b> <b>Consultant, Pandemic Emergency Financing (PEF) Facility</b> <ul style="list-style-type: none"><li>• Served as the primary public health consultant for the World Bank's PEF, which is a rapid disbursing financing mechanism that provides funds to enable a quick and effective response to large-scale disease outbreaks. As a consultant, assisted with strategy on how to delegate funds to crises regions to better strengthen health systems facing ongoing</li></ul>

outbreaks. Also assisted with the design and utilization of geospatial data visualizations which would map outbreaks at the street level to assist with resource allocation and appropriate quarantining practices.

#### **UNITED STATES AIR FORCE**

Worldwide Locations

2017-2019

##### **Director of Curriculum on Critical Care, African Partnership Rapid Response Program**

- Appointed as the head of critical care programs for the APRRP, which is a program funded by the US Department of State and housed within the Department of Defense's Center for Global Health Engagement. Through this program, tasked to assist in the training of partner militaries in Rwanda and Ghana to build up relevant capacity in response to future health emergencies. Novel technological platforms, including the use of mobile ultrasounds and smart stat ipad simulators, were frequently utilized in teaching.

#### **HARVARD GLOBAL HEALTH INSTITUTE**

2015-2018

##### **Director, Global Health Policy and Diplomacy**

- Responsibilities included directing a university-wide research and advocacy portfolio centered on several policy platforms within global health, including climate change and health, health systems strengthening, and increasing donor support for pandemic preparedness initiatives. Collaborators on this work include the Institute for Health Metrics, World Health Organization, GAVI, the United Nations Development Program, the United States Centers for Disease Control, and the US Department of Defense.

#### **CAMBODIA MINISTRY OF HEALTH**

Phnom Penh, Cambodia

2011-2014

##### **Health Policy Researcher and Epidemiologist**

- As a member of the Global Health pathway at the University of Washington Medical Center during my internal medicine residency, was placed at the Cambodian Ministry of Health for nearly half of my 3-year medical training. Here, conducted fieldwork and epidemiologic studies related to the control of diabetes and hypertension throughout Cambodia (related peer-reviewed publications below). Also worked to expand access to essential immunizations such as Rotavirus and Pentavalent vaccine, helping to implement GAVI-funded projects.

#### **UNITED STATES CENTERS FOR DISEASE CONTROL**

Bangkok, Thailand

2011

##### **Health Policy Researcher, International Emerging Infections Program**

- Led an analysis of influenza vaccination policies across all countries in ASEAN after the H1N1 pandemic, resulting in a first-authored publication in *PLoS One*. This position was policy-focused and required working with an interdisciplinary group of stakeholders from various governments in the region, the pharmaceutical industry, and multilateral institutions like WHO and GAVI.

#### **CHINA CENTERS FOR DISEASE CONTROL**

Shanghai, China

2009-2010

##### **Health Policy Researcher, Fulbright-Fogarty Public Health Fellowship**

- As a Fulbright recipient, spent the year working for the China CDC based in Shanghai, China, working with a multidisciplinary group of epidemiologists, provincial government authorities, and in-country health experts to assess the cost-effectiveness of various cancer screening strategies for colorectal and breast malignancies.

#### **MAKERERE UNIVERSITY**

Kampala, Uganda

- 2008-2009      **Research Fellow, Doris Duke International Research Scholar**
- Worked with the Ugandan Ministry of Health to help optimize microbiologic lab protocols in the detection of drug-resistant malaria strains. Much of my focus was in the laboratory, conducting experiments comparing different gel electrophoresis techniques to determine the optimal diagnostic strategy. Results of this work were published in peer-reviewed journals as noted below.

**NATIONAL BOARD MEMBERSHIPS:**

- 2018 -      **COUNCIL ON FOREIGN RELATIONS**  
Washington, DC  
Term Member
- Work in close collaboration with Thomas Bollyky, Director of the Global Health program at CFR, in drafting policy position pieces and other advocacy materials.
- 2018 -      **INSTITUTE FOR MEDICAID INNOVATION**  
Washington, DC  
**Member, Best Practices Committee**
- Serve as one of two physicians on IMI's Best Practices Committee, which is tasked with identifying the most innovative initiatives in Medicaid managed care programs nationwide which address critical health and social issues.
- 2018 -      **NORTHWEST HARVEST**  
Seattle, WA  
**Board of Directors**
- Elected to the organization's overseeing board, assisting with oversight of logistics, management, and quality of services while providing overarching input on strategic vision. Northwest Harvest serves an outsized role across the region in combating food insecurity among vulnerable populations
- 2015 - 2018      **GREATER BOSTON FOOD BANK**  
Boston, MA  
**Board of Advisors and founding member of the Food Insecurity task force**
- Led the effort to establish the first mobile food market for vulnerable populations at risk for food insecurity in Allston, MA (please see Health Affairs article notated above for further details). These markets are geared to get healthy produce and food staples to those families in Eastern Massachusetts that struggle to obtain one meal per day.
- 2014 - 2018      **CHARLES RIVER COMMUNITY HEALTH CENTER**  
Allston, MA  
**Board of Directors and Chair of the Quality Control Subcommittee**
- Health center serves as a safety-net provider for a chronically underserved and largely uninsured immigrant population located in the Allston/Brighton neighborhood of Boston
  - As a board member, my efforts have focused on fundraising, improving quality care metrics, and initiating community outreach programs such as the recurring mobile food markets described above
- 2014 - 2018      **BOSTON HEALTHCARE FOR THE HOMELESS PROGRAM**  
Boston, MA  
**Co-Founder, Night Clinic for Homeless Veterans in Eastern Massachusetts**
- Provide basic medical and mental health services weekly to US Armed Forces Veterans that are homeless and living at the New England Center for Homeless Veterans



## PROFESSIONAL ORGANIZATIONS:

- GLOBAL HEALTH COUNCIL**  
Washington, DC  
2018 - Member, Non-Communicable Disease Roundtable
- INTERNATIONAL UNION FOR TUBERCULOSIS AND LUNG DISEASES**  
Paris, France  
2018 - **Member of the Adult and Child Lung Health section**
- AMERICAN THORACIC SOCIETY**  
Washington, DC  
2014 – 2018 **Member of Assemblies on Environmental and Occupational Health**
  - Working to build continuing education programs on climate change and lung health for pulmonary physicians globally
- AMERICAN COLLEGE OF PHYSICIANS**  
Philadelphia, PA  
2014 - 2018 **Member**
  - Participant in continuing education programs nationally to maintain relevant credentialing in Pulmonary & Critical Care Medicine
- MASSACHUSETTS MEDICAL SOCIETY**  
Waltham, MA  
2014 -2018 **House Delegate**
  - Voting member of the MMS on health policy statements that are then distributed to the state legislature for adoption.

## HOSPITAL/AFFILIATED INSTITUTIONAL APPOINTMENTS:

- |               |                                                           |                                                |
|---------------|-----------------------------------------------------------|------------------------------------------------|
| 2018-         | Medical Tele-Intensive Care Physician                     | <b>SWEDISH MEDICAL CENTER</b><br>Seattle, WA   |
| 2018-         | Medical & Cardiac Tele-Intensive Care Physician           | <b>UNIVERSITY OF WASHINGTON MEDICAL CENTER</b> |
| 2017-<br>2018 | Associate Physician in Pulmonary & Critical Care Medicine | <b>BRIGHAM &amp; WOMEN'S HOSPITAL</b>          |
| 2014-<br>2018 | Medical & Surgical Intensive Care Nocturnist              | <b>MOUNT AUBURN HOSPITAL</b><br>Cambridge, MA  |
| 2014-<br>2018 | Medical Intensive Care Nocturnist                         | <b>BRIGHAM &amp; WOMEN'S FAULKNER HOSPITAL</b> |

## EDITORIAL ROLES:

- |        |                  |                             |
|--------|------------------|-----------------------------|
| 2017 - | Assistant Editor | <i>BMC Public Health</i>    |
| 2018 - | Ad hoc Reviewer  | <i>Lancet Global Health</i> |
| 2018 - | Ad hoc Reviewer  | <i>BMJ Global Health</i>    |

## HONORS & DISTINCTIONS:

- 2017      **40 UNDER 40 NATIONAL LEADERS IN MINORITY HEALTH:** Recipient of distinction conferred by the United States Congressional Black Caucus and the American Medical Association
- 2016      **DEAN'S MERITORIOUS FELLOWSHIP,** Harvard Kennedy School: \$30,000 scholarship
- 2015      **DISTINGUISHED GRADUATE HONORS,** Commissioned Officer Training School, US Air Force
- 2015      **HARVARD MEDICINE FELLOWSHIP TEACHING AWARD:** awarded by medicine residents to a clinical fellow for compassion and dedication to teaching
- 2013      **ROTARY INTERNATIONAL GLOBAL GRANT:** Scholarship (\$30,000 value) recipient to study at the University of Cambridge
- 2012      **MEDICAL TEAMWORK, LEADERSHIP AND CARING AWARD:** awarded by the senior administration of the University of Washington Medical Center
- 2010      **COLUMBIA UNIVERSITY LATTES FELLOWSHIP:** \$6,000 stipend to study seasonal influenza vaccination policy in Southeast Asia
- 2010      **NEW YORK PRESBYTERIAN PAUL H. DOUGLAS INFECTIOUS DISEASE RESEARCH PRIZE:** \$8000 research grant to study seasonal influenza vaccination policy in Southeast Asia
- 2009      **FULBRIGHT GRANT:** \$50,000 stipend to study non-communicable disease burden in northeast China
- 2009      **ARNOLD P. GOLD FOUNDATION FELLOWSHIP:** \$2500 research prize utilized to study non-communicable disease burden in Northeast China
- 2003      **HAROLD T. SHAPIRO PRESIDENTIAL PRIZE FOR ACADEMIC EXCELLENCE:** Given to the top academic percentile of class from Princeton through first two years of study

**MEDICAL CERTIFICATIONS:**

- 2019      **UNITED STATES NAVAL EXPEDITIONARY MEDICINE INSTITUTE**  
Certification in Tactical Combat Casualty Care
- 2018      **DIPLOMATE, AMERICAN BOARD OF INTERNAL MEDICINE,**  
**CRITICAL CARE MEDICINE**
- 2017      **DIPLOMATE, AMERICAN BOARD OF INTERNAL MEDICINE,**  
**PULMONARY DISEASES**
- 2017      **UNITED STATES AIR FORCE**  
Certification in Aerospace Critical Care Medicine
- 2016      **DIPLOMATE, AMERICAN BOARD OF INTERNAL MEDICINE**

**LICENSURE:**

2018- **WASHINGTON STATE MEDICAL LICENSE**

2014- **BOARD OF REGISTRATION IN MEDICINE**  
2019 Commonwealth of Massachusetts

2011- **WASHINGTON STATE MEDICAL LICENSE**  
2014

## **TEACHING AND TRAINING:**

### HARVARD COURSES:

2015 Bedside Critical Care Ultrasound Techniques for the Internist Harvard Medical School,  
eight 2 hour lectures

### NON-HARVARD COURSES:

2017 International Development/EC.789 Water, Climate Change and Health MIT, three 1.5 hour  
lectures

2017 Water, Sanitation, Hygiene and Environmental Innovations for the MIT, three 1.5 hour  
Common Good lectures

### ADVISORY AND SUPERVISORY ROLES:

2018- **Attending Physician, University of Washington Affiliated Hospitals**  
Provide clinical supervision and mentoring of medical students, resident and clinical fellows in the  
medical and cardiac intensive care units in the management of critically ill patients.

2017- **Attending Physician, Brigham & Women's Hospital**  
2018 Provide clinical supervision and mentoring of medical students, residents, and clinical fellows on the  
pulmonary consult service and in medical and neurologic intensive care units for 10 weeks annually.  
Responsibilities also include giving daily teaching lectures on selected topics.

2015- **Lead Critical Care Air Transport Physician, US Air Force Reserves**  
Designed a continuing education critical care curriculum focused on clinical practice guidelines for  
the US Air Force ICU aerospace program. During monthly reservist training weekends, teach a group  
of 20 flight physicians and nurses these relevant protocols.

2014- **Clinical Fellow, Brigham & Women's Hospital**  
2017 Provide clinical teaching and supervision of medical students and residents on the pulmonary consult  
service and in various intensive care units at Harvard-affiliated hospitals for 40 weeks annually.

2011- **Internal Medicine Resident, University of Washington**  
2014 Provide clinical teaching and supervision of medical students and clinical interns on medical wards for  
48 weeks annually.

## **RESEARCH FUNDING:**

- A. CURRENT  
2019 Sponsor: Bloomberg Philanthropies  
Foundation Sponsored Grant  
Title: Bloomberg Initiative to Reduce Tobacco Use  
Total Costs: \$1.7 million  
Role: Co-Primary Investigator
- B. FORMER  
2018 Sponsor: Marion and Jasper Whiting Foundation  
Foundation Sponsored Grant  
Title: Adapting to the Health Effects of Climate Change in the South Pacific  
Total Costs: \$20000  
Role: Primary Investigator
- C. FORMER  
2017 Sponsor: Bloomberg Philanthropies  
Foundation Sponsored Grant  
Title: Bloomberg Initiative to Reduce Tobacco Use  
Total Costs: \$3.2 million  
Role: Co-Primary Investigator

## **BIBLIOGRAPHY:**

### **PEER-REVIEWED MANUSCRIPTS:**

1. **Gupta V**, Mokdad A, Bollyky T, Glassman A, Daschle T. Leveraging climate change to improve global tobacco control. *The Lancet* 2019; June 1, 2182-2183. PMID: 31162068.
2. **Gupta, V**, Katz R, Swaminathan S. Reimagining development assistance for health. *The New England Journal of Medicine* 2018; September 26, 1-3. PMID: 30256712.
3. **Gupta V**, Kraemer JD, Katz R, Jha AK, Kerry VB, Sane J, Ollgren J, Salminen MO. Analysis of results from the Joint External Evaluation: Examining its strength and assessing for trends among participating countries. *Journal of Global Health* 2018; 8:020416 (9).
4. **Gupta V**, Tsai AC, Mason-Sharma A, Goosby EP, Jha AK, Kerry VB. Have geopolitics influenced decisions on American health foreign assistance efforts during the Obama presidency. *Journal of Global Health* 2018; 8:010417 (10). PMID: 29740500.
5. **Gupta V**, Mason-Sharma A, Lyon ZM, Orav EJ, Jha AK, Kerry VB. Has development assistance for health facilitated the rise of more peaceful societies in sub-Saharan Africa? *Glob Public Health* 2018; Mar 13; 1-11. PMID: 29532733.
6. **Gupta, V**, Kerry VB. Globally inclusive investments in health: benefits at home and abroad. *BMJ* 2017; 356:j1004. PMID: 28246085.
7. **Gupta V**, Mason-Sharma A, Caty SN, Kerry V. Adapting global health aid in the face of climate change. *Lancet Global Health* 2017. Feb; 5(2): e133-e134. PMID: 28104175.
8. **Gupta V**, Sugg N, Butners M, White GA, Molnar A. Tuberculosis among the homeless: preventing another outbreak through community action. *The New England Journal of Medicine* 2015; 372:1483-1485. PMID: 25875254.

9. **Gupta V**, Kerry VB, Goosby E, Yates R. The post-2015 global health agenda: politics and the promotion of universal health coverage in the Global South. *The New England Journal of Medicine* 2015; 373:1189-1192. PMID: 26376044.
10. **Gupta V**, Dhillon R, Yates R. Financing universal health coverage by cutting fossil fuel subsidies. *The Lancet Global Health* 2015; Jun;3(6):e306-7. PMID: 26001572.
11. **Gupta V**, Dhillon R, Yates R. Most lower-middle income countries lack significant capacity in renewable energy. *The Lancet Global Health* 2015. Nov; 3(11):e675. PMID: 26475011.
12. An Y, Yi S, Fitzpatrick AL, **Gupta V**, Raingsey PP, Oum S, Logerfo JP. Appropriate body mass index and waist circumference cutoff for overweight and central obesity among adults in Cambodia. *PLoS One* 2013; 8(10). PMID: 24205019.
13. **Gupta V**, LoGerfo JP, Raingsey PP, Fitzpatrick AL. The prevalence and associated factors for prehypertension and hypertension in Cambodia. *Heart Asia* 2013; 5: 253-258. PMID: 27326148.
14. **Gupta V**, Han Nguyen TN, Xeuatvongsa, A, Sovann L, Yoocharoen P, Olveda R, Cutter J, Oo K, Ratih TSD, Olsen SJ. Influenza vaccination guidelines and vaccine sales in southeast Asia: 2008-2011. *PLoS One* 2012; 7(12). PMID: 23285200
15. **Gupta V**, Perez-Perez G, Dorsey G, Rosenthal PJ, Blaser MJ. The seroprevalence of *Helicobacter pylori* and its relationship to malaria in Uganda. *Trans R Soc Trop Med Hyg* 2012; 106 (1). PMID: 22018600
16. **Gupta V**, Gu K, Chen Z, Lu W, Shu XO, Zheng Y. Concordance of self-reported and medical chart information on cancer diagnosis and treatment. *BMC Med Res Methodol* 2011; 11 (1). PMID: 21592352
17. **Gupta V**, Dorsey G, Hubbard AE, Rosenthal PJ, Greenhouse B. Gel versus capillary electrophoresis genotyping for categorizing treatment outcomes in two antimalarial trials in Uganda. *Malaria Journal* 2010, 9:19. PMID: 20074380

#### **PEER-REVIEWED MANUSCRIPTS (PENDING PUBLICATION)**

1. GBD 2017 Human Resources for Health Collaborators. Measuring the availability of human resources for health and its relationship to universal health coverage: estimates for 195 countries and territories from 1990 to 2017.
2. Hulland E, Wiens K, Shirude S, Morgan J, Bertozzi-Villa A, Farag TH, Fullman NH, Kraemer M, Miller-Petrie MK, Rabinowitz P, **Gupta V**, Reiner RC, Wasserheit JN, Bell BP, Hay SI, Weiss DJ, Pigott DM. Travel time to health facilities in areas of outbreak potential: maps for guiding local preparedness and response.
3. Irvine, C, Pigott DM, **Gupta V**. Strategically investing in human resources for health to bolster pandemic preparedness.
4. Hsiao T, Reitsma MB, Anderson JA, Arian N, Feldman RG, Gakidou E, **Gupta V**. Reexamining rates of decline in lung cancer risk after smoking cessation: a meta-analysis.
5. GBD 2017 Chronic Respiratory Disease Collaborators. The prevalence and attributable health burden of chronic respiratory diseases from 1990-2017: a systematic analysis from the Global Burden of Disease Study 2017.



**EARNED MEDIA RECOGNITION (TV, WEBCASTS, MISC):**

1. **CNN NewDay** morning broadcast; interviewed by Martin Savidge on Aug 10, 2019 regarding gun control in the United States and its public health ramifications. Link to clip can be found [here](#).
2. **National Public Radio**; interviewed by Marc Silver on August 6, 2019 regarding the global landscape of gun control policies and key differences that exist in the United States. Interview can be found [here](#).
3. **World Health Organization** webex panel on tobacco and lung health; served as a panelist with Director General Tedros to discuss the impact of tobacco smoking on lung health. Published on May 31, 2019, clip can be found [here](#).
4. **RollingStone** magazine interview on the West Africa Ebola outbreak; interviewed by Elisabeth Garber-Paul on Oct, 9, 2014. Article based on interview can be found [here](#).

**EARNED MEDIA RECOGNITION (WRITTEN):**

1. **Gupta V.** Fix our healthcare system. Don't try to make it perfect. *The New York Times*. July 30, 2019.
2. **Gupta V,** Daschle T. What the history of healthcare reform in America suggests about the future of Obamacare. *NBC News*. May 6, 2019.
3. **Gupta V.** The unforced error of Medicare for all. *The Wall Street Journal*. March 7, 2019.
4. **Gupta V,** Kayyem J. How to make climate change doubters pay a political price. *Foreign Policy*. December 19, 2018.
5. **Gupta V.** The Ohio governor's election is a gut check for Democratic messaging on health care. *NBC News*. October 15, 2018.
6. Monaco L, **Gupta V.** The next pandemic will be arriving shortly. *Foreign Policy*. Sept 28, 2018.
7. **Gupta V.** Vote common sense for health. *The Toledo Blade*. Sept 22, 2018.
8. **Gupta V.** Focusing on solutions to Ohio's opioid crisis. *The Columbus Dispatch*. Aug 17, 2018.
9. **Gupta V.** Fool me once, shame on you. Fool me twice...*The Toledo Blade*. July 31, 2018.
10. **Gupta V,** Kerry VB. Foreign aid makes America safer. *Foreign Policy*. April 11, 2018.
11. **Gupta V,** Baer TE, Hamdan A, Brodowski K. The Affordable Care Act and food insecurity: ending a chronic problem through innovative community partnerships. *Health Affairs*. September 20, 2016.
12. **Gupta V.** The health consequences of economic isolation. *The Huffington Post*. December 31, 2014.
13. **Gupta V.** The Obama doctrine. *The Huffington Post*. December 18, 2014.
14. **Gupta V.** Reinventing American exceptionalism: why US foreign policy should embrace idealism. *The Huffington Post*. December 4, 2014.
15. **Gupta V.** Towards universal health coverage: lessons the GOP can learn from the Latin American experience. *The Lancet* 2014.
16. **Gupta V.** Realpolitik and global pandemics. *The Lancet* 2014.

**INVITED PRESENTATIONS:**

2019	Digital Health and Chronic Lung Disease	Apple, Incorporated Cupertino, California
2018	Global Disease Burden from Tobacco and Alcohol	World Health Organization Executive Session Geneva, Switzerland
2018	Post-Astana: Achieving Universal Health Care	Center for Global Development Washington, DC
2018	The State of Global Tobacco Control	Union's 49 <sup>th</sup> Annual Conference on Lung Health The Hague, Netherlands
2018	Mexico's Progress in Tobacco Control	Bloomberg Philanthropies Partners Meeting Mexico City
2017	Global Health Security Engagement	Bundeswehr Command and Staff College (CSC); Hamburg, Germany
2016	Achieving the Health-Related Sustainable Development Goals (SDGs)	2 <sup>nd</sup> meeting of Global Health Policy Think Tanks and Academic Institutions on the SDGs; Rio de Janeiro, Brazil
2016	Health Aid as Soft Power: A Sustainable Way Forward for American Foreign Policy	Keynote Address; Rotary International District Conference; Chatham, Ontario (Canada)
2015	Strategic Health Diplomacy: Health Aid and Soft Power	Cambridge Rotary Club; Cambridge, England
2014	Treating Latent Tuberculosis among Seattle's Homeless	Chief of Medicine Conference, Harborview Medical Center; Seattle, Washington
2013	Cambodia's Growing Epidemic of Non-Communicable Diseases	Chief of Medicine Conference, Harborview Medical Center; Seattle, Washington
2010	The cost-effectiveness of various colorectal cancer techniques in Shanghai Province	Asia-Pacific Conference on Non-Communicable Diseases; Istanbul, Turkey
2009	Optimizing the Detection of Drug-Resistant Malaria in East Africa	Doris Duke International Research Conference; Bethesda, MD

# **EXHIBIT 2**



## **CURRICULUM VITAE W. IAN LIPKIN**

### DATE OF PREPARATION CV

20 April 2020

### ACADEMIC TRAINING

Sarah Lawrence College, Bronxville, New York, B.A., 1974

Rush Medical College, Chicago, Illinois, M.D., 1978

State of Washington medical licensure, 1979

State of California medical licensure, 1982

State of New York medical licensure, 2018

### TRAINEESHIP

Institute of Neurology, London, England, Clinical Clerk, 1977-1978

Intern in Medicine, Presbyterian Hospital, University of Pittsburgh, Pittsburgh, PA, 1978-1979

Resident in Medicine (Primary Care Track), University of Washington, Seattle, WA, 1979-1981

Resident in Neurology, University of California, San Francisco, CA, 1981-1984

Postdoctoral Fellow, Research Institute of Scripps Clinic, La Jolla, CA, 1984-1987

(mentors: Michael Oldstone, Floyd Bloom)

Senior Research Associate, Research Institute of Scripps Clinic, La Jolla, CA, 1988-1990

### BOARD QUALIFICATION

National Board of Medical Examiners, 1979

American Board of Internal Medicine, 1981

American Board of Psychiatry and Neurology, 1986

### PROFESSIONAL ORGANIZATIONS AND SOCIETIES

American Academy for the Advancement of Science

American Neurological Association

American Psychopathological Association

American Society for Microbiology

American Society for Neurovirology

American Society for Virology

International Society for Autism Research

New York Academy of Sciences

Society for Biological Psychiatry

Society for Neuroscience

Infectious Diseases Society of America

### ACADEMIC APPOINTMENTS

- Director, Emerging Diseases Laboratory, University of California, Irvine, CA, 1990-2002
- Assistant Professor, Neurology, Anatomy and Neurobiology, Microbiology and Molecular Genetics, University of California, Irvine, CA, 1990-1993
- Associate Professor, Neurology, Anatomy and Neurobiology, Microbiology and Molecular Genetics, University of California, Irvine, CA, 1993-1996



- Principal Investigator and Co-Director, Markey Program in Human Neurobiology, University of California, Irvine, CA, 1994-1999 (Program project comprised of 28 investigators in clinical and basic neuroscience focused on imaging and informatics. Provided startup funds for new faculty, pilot projects, purchase of 4.0 Tesla magnet facility for research and clinical imaging)
- Sabbatical Professor, Institut für Virologie und Immunbiologie, Universität Würzburg, 1996
- Professor, Neurology, Anatomy and Neurobiology, Microbiology and Molecular Genetics, University of California, Irvine, CA, 1996-2002
- Adjunct Professor, Neuropharmacology, The Scripps Research Institute, La Jolla, CA, 1997-2002
- Louise Turner Arnold Chair in the Neurosciences, University of California, Irvine, CA, 2000-2002
- Jerome L. and Dawn Greene Professor of Epidemiology, Mailman School of Public Health, Professor of Neurology and of Pathology, College of Physicians and Surgeons, Founding Director, Jerome L. and Dawn Greene Infectious Disease Laboratory, Columbia University, New York, NY, 2002-2007
- Principal Investigator, Northeast Biodefense Center, 2003-2015 (NIH Regional Center of Excellence in Biodefense and Emerging Infectious Diseases comprising institutions and investigators in New York, New Jersey, Connecticut, Puerto Rico and the Virgin Islands)
- Visiting Professor, Beijing University, 2005
- Dalldorf Affiliated Research Physician, Wadsworth Center, New York State Department of Health, 2003-present
- John Snow Professor of Epidemiology and Director, Center for Infection and Immunity, Columbia University, 2008-present
- Principal Investigator, Center for Research in Diagnostics and Discovery, 2014-present (NIH Center for Excellence in Translational Research comprising investigators at Columbia University, EcoHealth Alliance, New York State Department of Health, New York City Department of Health and Mental Hygiene, University of North Carolina, Stanford University, University of California Berkeley and University of Washington)

## OTHER APPOINTMENTS

- Attending Physician, University of California Irvine Medical Center, 1990-2002
- Member, World Health Organization Laboratory Network, 2003-present
- Director, World Health Organization Collaborating Centre for Diagnostics in Zoonotic and Emerging Infectious Diseases, 2008-2013
- Scientific Director, Joint Research Laboratory for Pathogen Discovery with the National Institute for Viral Disease Control and Prevention, Chinese Center for Disease Control and Prevention, 2013-present
- Member, World Health Organization Emerging and Dangerous Pathogens Laboratory Network
- Member, World Health Organization Global Alert Response Network

## HONORS

- National Multiple Sclerosis Society Postdoctoral Fellowship, 1984-1987
- President, Society of Fellows, Research Institute of Scripps Clinic, 1986-1987
- Clinical Investigator Development Award, National Institutes of Health, National Institute of Neurological and Communicative Disorders and Stroke, 1987-1992
- NARSAD Young Investigator, 1991
- Pew Scholar, 1991
- Visiting Professor, Japanese Human Science Foundation, 1999
- Millennium Commencement Speaker, Sarah Lawrence College, 2006
- Visiting Bruenn Professor, Columbia College of Physicians and Surgeons, 2000
- Louise Turner Arnold Chair in the Neurosciences, 2000
- Foundation Lecturer, American Society of Microbiology, 2001-2003





- Ellison Medical Foundation Senior Scholar in Global Infectious Disease. 2001
- Distinguished Lecturer, Institute for Genomics and Bioinformatics, University of California Irvine, 2003
- Special Advisor to the Ministry of Science and Technology, People's Republic of China, 2003
- Fellow, New York Academy of Sciences, 2004
- Distinguished Lecturer, Centers for Disease Control, 2005
- Honorary Director, Beijing Infectious Disease Center, Beijing University, 2005
- Presidential Speaker, Triological Society, 2006
- Fellow, American Society for Microbiology, 2006
- Alumnae Citation for Achievement and Service, Sarah Lawrence College, 2006
- John Snow Professor of Epidemiology, 2008
- Scientific American, Top 25 Science Stories of 2007
- Featured Investigator in NIAID Discovery News, 2008. "A Microbe Hunter to the World,"
- Distinguished Lecturer, University of Medicine and Dentistry of New Jersey, 2008
- Distinguished Lecturer, Pennsylvania State University, March 2009
- Distinguished Speaker, Walter Reed Army Institute of Research, September 2009
- Kinyoun Lecturer, National Institute of Allergy and Infectious Diseases, Bethesda, MD, October 2009
- Distinguished Lecturer, Center for Autism Research, Philadelphia, PA, October 2009
- The Courage Fund Visiting Professorship, Yong Loo Lin School of Medicine, National University of Singapore, November – December 2009
- Fellow, Wildlife Conservation Society, 2009
- Fellow, American Association for the Advancement of Science, 2009
- Member, Association of American Physicians, 2010
- Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry Charles C. Shepard Science Award, 2011
- *New York Times* Op-Ed "The Real Threat of Contagion" ranked fifth most-emailed article on nytimes.com, September 12, 2011
- Hsu-Li Distinguished Lectureship in Epidemiology, University of Iowa, April 2012
- Drexel Prize in Translational Medicine, Drexel University, June 2013
- Rush Medical College Distinguished Alumnus Award, October 2013
- Simonyi Lecturer, Oxford University, November 2013
- Mendel Medal, Villanova University, October 2014
- The Bernard Fields Lectures on Microbial Pathogenesis, Scripps University, February 2014
- Fellow, Infectious Diseases Society of America, 2015
- Scientific American, 10 World Changing Ideas, 2015
- China International Science and Technology Cooperation Award, 2016
- Guest Professorship, Nankai University, 2018
- Castleman Warrior Researcher(s) of the Year, University of Pennsylvania, 2018

### ***Invited Lectures***

1. American Society for Neurologic Investigation, 110<sup>th</sup> Annual Meeting of the American Neurological Association, Symposium on Viruses and the Nervous System, Chicago, IL, October, 1985
2. 19<sup>th</sup> Annual Meeting of the American Society for Neurochemistry, New Orleans, LA, March 1988



3. 68<sup>th</sup> Annual Symposium of the Association for Research in Nervous and Mental Disorders, Immunologic Mechanisms in Neurologic and Psychiatric Disease, New York, NY, December 1988
4. Third Carolina Conference on Molecular Neurobiology, Neurodegenerative Diseases: Confluence of Neurobiology, Virology and Immunology, Wrightville Beach, NC, March 1990
5. Research Institute of Scripps Clinic, La Jolla, CA, May 1990
6. The Wistar Institute, Philadelphia, PA, July 1990
7. Vollum Institute for Advanced Biomedical Research/Oregon Health Sciences University, Portland, OR, July 1990
8. University of North Carolina, Chapel Hill, NC, September 1990
9. Marine Biological Laboratory, Pathogenesis of Neuroimmunologic Diseases, Woods Hole, MA, August 1990
10. Instituto Superiore di Sanita, Ibridazione In Situ: Aspetti Biologici e Medico-Diagnostici, Rome, Italy, September 1990
11. University of Glasgow, Workshop on Persistent Viral Infections With Altered Cellular Function, Galway, Ireland, May 1991
12. Robert Koch-Institute and Institute for Virology, Freie Universität of Berlin, Berlin, Germany, May 1991
13. Centro de Biologia Molecular, Madrid, Spain, May 1991
14. University of Chicago, Chicago, IL, May, 1991
15. FASEB Conference on Neuroimmunology, Saxtons River, VT, June, 1991
16. Gordon Research Conference, Animal Cells and Viruses, Tilton, NH, June 1991
17. Marine Biological Laboratory, Pathogenesis of Neuroimmunologic Diseases, Woods Hole, MA, August 1991
18. University of Wisconsin, Madison, WI, October 1991
19. Pew Biomedical Scholars Program Annual Meeting, Molecular Characterization of Borna Disease Virus, A Novel Neurotropic Agent, San Jose, Costa Rica, March 1992
20. Foundation Pour L'Etude Du Systeme Nerveux, Neural-Immune Interactions, Geneva, Switzerland, April 1992
21. Justus-Liebig Universität, Borna Disease Virus: Characterization and Pathogenesis, Giessen, Germany, April 1992
22. New York University Medical Center, Borna Disease Virus: Characterization and Pathogenesis, New York, NY, May 1992
23. Thomas Jefferson University, Philadelphia, PA, August 1992
24. Mount Sinai School of Medicine, New York, NY, September 1992
25. UCLA Neuroscience Seminar Series, Los Angeles, CA, April 1993
26. The Scripps Research Institute, La Jolla, CA, February 1994
27. University of Minnesota, Minneapolis, MN, June 1994
28. International Center for Genetic Engineering and Biotechnology, New Delhi, India, February 1995
29. Pew Biomedical Scholars Program Annual Meeting, San Juan, Puerto Rico, March 1995
30. Symposium on Borna Disease Virus, Chair of session on Borna Disease in Animals and Humans, Tübingen, Germany, May 8-9, 1995
31. Universität Freiberg, Freiberg, Germany, May 1995
32. Universität Würzburg, Würzburg, Germany, May 1995
33. University of California, Riverside, October 1995
34. University of California, San Diego, February 1996
35. Annual Meeting American Society for Microbiology, New Orleans, LA, May 1996
36. European Union Conference, New Aspects of Agent-Induced Brain Disorders, Portofino, Italy, June 1996
37. Universität Marburg, Marburg, Germany, June 1996
38. Universität Würzburg, Würzburg, Germany, June 1996
39. Justus-Liebig Universität, Borna Disease Virus: Characterization and Pathogenesis, Giessen, Germany, June 1996



40. Centers for Disease Control and Prevention, Atlanta, GA, August 1996
41. First International Conference on Emerging Zoonoses, Jerusalem, Israel, November 1996
42. University of California, Berkeley, November 1996
43. Karolinska Institutet, Stockholm, Sweden, January 1997
44. Neurology of Autism, CAN Foundation, Redondo Beach, CA, March 1997
45. European Union Conference, Viruses and Disorders of the Brain, Cambridge, UK, March 1997
46. Veterans Medical Center, Long Beach, CA, April 1997
47. First International Symposium of Neurovirology, Philadelphia, PA, May 1997
48. Frontiers in Virology, The Scripps Research Institute, La Jolla, CA, May 1997
49. Annual Meeting American Society for Virology, State-of-the-Art Lecture, Bozeman, MT, July 1997
50. University of California, Davis, August 1997
51. National Institute of Infectious Diseases, Tokyo, Japan, August 1997
52. Fukushima Medical College, Fukushima, Japan, August 1997
53. Rational Drug Design Laboratories, Fukushima, Japan, August, 1997
54. Institute of Immunological Science, Hokkaido University, Sapporo, Japan, September 1997
55. Dedication of the William J. Gillespie Neuroscience Facility, Microbiology and Neuroscience in the Twenty First Century, University of California, Irvine, September 1997
56. University Hospital of Zürich, Zürich, Switzerland, October 1997
57. International Titisee Conference, Neurological Diseases: Models, Molecules and Mechanisms, Lake Titisee, Germany, October 1997
58. Institute of Virology, Veterinary University of Vienna, Vienna, Austria, October 1997
59. University of California, Irvine MD/PhD Retreat, UCLA Conference Center, Lake Arrowhead, CA, December 1997
60. University of Nevada, Reno, NV, December 1997
61. Keystone Symposium, Molecular Aspects of Viral Immunity, Tamarron, CO, February 1998
62. International Kilmer Memorial Conference, Phoenix, AZ, March 1998
63. Children's Hospital Los Angeles/University of Southern California, Los Angeles, CA, March 1998
64. Society for Neuroscience Brain Awareness Week Symposium, Irvine, CA, March 1998
65. Society for General Microbiology: Viruses and the Nervous System, Nottingham, UK, April 1998
66. University of California, Irvine Grand Rounds in Neurology and Neurosurgery, Irvine, CA, May 1998
67. Fiftieth Anniversary of The National Institute of Allergy and Infectious Disease, Hamilton, MT, June 1998
68. FASEB Conference, Microbial Pathogenesis: Mechanisms of Infectious Diseases, Snowmass, CO, July 1998
69. XX1st Collegium Internationale Neuropsychopharmacologicum Congress, New Developments In Animal Modeling For Schizophrenia, Glasgow, United Kingdom, July 1998
70. Sarah Lawrence College, Creativity in the Arts and Sciences, Bronxville, NY, September 1998
71. International Symposium on Borna Disease Virus, Freiberg, Germany, September 1998
72. Robert Koch Institut, Berlin, Germany, October 1998
73. NIMH/CAN/NAAR Symposium, Animal Models for Autism, Santa Monica, CA, October 1998
74. International Centre for Genetic Engineering and Biotechnology, New Delhi, India, November 1998
75. American College of Neuropsychopharmacology, Las Croabas, Puerto Rico, December 1998
76. National Institutes of Health, Tokyo, Japan, February 1999
77. Kagoshima University, Kagoshima, Japan, February 1999
78. Shimane Medical College, Shimane, Japan, February 1999
79. Joint Experimentations Futures Seminars, Bio-Centric Operations, Joint Warfighting Center, Fort Monroe, VA, March 1999
80. Keystone Symposium, Central Nervous System Infections: Host Pathogen Interactions, Taos, NM, March 1999



81. University of California, Irvine Grand Rounds in Psychiatry, Irvine, CA, April 1999
82. American Society for Microbiology, A Cell Biological Approach to Microbial Pathogenesis, Portland, OR, April 1999
83. Biological Psychiatry, Animal Models of Neuropsychiatric Diseases, Washington DC, May 1999
84. Washington University, St. Louis, MO, May 1999
85. Sarah Lawrence College, Bronxville, NY, May 1999
86. Gordon Research Conference, Neurovirology, New London, NH, June 1999
87. National Institutes of Health Blue Ribbon Panel on New Approaches to Identifying Infectious Etiologies of Chronic Disease, Bethesda, MD, June 1999
88. Bundesforschungsanstalt für Viruskrankheiten der Tiere, Tübingen, Germany, August 1999
89. University of Heidelberg, Heidelberg, Germany, August 1999
90. XI World Congress of Psychiatry, Hamburg, Germany, August 1999
91. Centers for Disease Control and Prevention, Unexplained Deaths and Encephalitis Projects Working Group, Molecular Methods for Pathogen Discovery, Albany, NY, September 1999
92. 37<sup>th</sup> Infectious Diseases Society of America Annual Meeting, Philadelphia, PA, November 1999
93. University of California, Irvine, IRU in Animal Virology, Irvine, CA, December 1999
94. The Scripps Research Institute, La Jolla, CA, January 2000
95. Keystone Symposium, Genetics, Pathogenesis and Ecology of Emerging Viral Infections, Taos, NM, January 2000
96. 33<sup>rd</sup> Winter Conference on Brain Research, Breckenridge, CO, January 2000
97. Pew Scholars Program in the Biomedical Sciences, Puerto Vallarta, Mexico, January 2000
98. University of California, Irvine, Microbiology & Molecular Genetics, Irvine, CA, February 2000
99. Bruenn Professor Lecture, Columbia College of Physicians and Surgeons, February 2000
100. Mount Sinai School of Medicine, New York, NY, February 2000
101. University of Colorado, Denver, CO, February 2000
102. Defense Advanced Research Projects Agency, Arlington, VA, March 2000
103. International Congress of Molecular Infectiology, Marseilles, France, March 2000
104. Albert Einstein College of Medicine, Bronx, NY, March 2000
105. Cold Spring Harbor Laboratory, Strategies for Detection and Identification of Unknown Pathogens, Cold Spring Harbor, NY, April 2000
106. Plenary Lecture, International Conference on Antiviral Therapy, Baltimore, MD, April 2000
107. University of Medicine and Dentistry of New Jersey, Newark, NJ, May 2000
108. Sarah Lawrence College, Class of 2000 Commencement Speaker, Bronxville, NY, May 2000
109. Institute of Medicine of the National Academies, Forum on Emerging Infections, Washington, DC, June 2000
110. American Academy of Pediatrics, New Challenges in Childhood Immunizations, Chicago, IL, June 2000
111. National Center for Infectious Diseases Grand Rounds, Centers for Disease Control and Prevention, Atlanta, GA, June 2000
112. Co-Chair, Pathogenesis Session, Negative Strand Viruses 2000, Quebec City, Canada, June 2000
113. International Conference on Emerging Infectious Diseases, Atlanta, GA, July 2000
114. FASEB Symposium on Microbial Pathogenesis, Snowmass, CO, August 2000
115. International Symposium of Neurovirology, San Francisco, CA, September 2000
116. NIH Blue Ribbon Panel on Neurovirology, San Francisco, CA, September 2000
117. 38<sup>th</sup> Meeting of the Infectious Diseases Society of America, New Orleans, LA, September 2000
118. University of California, Berkeley, September 2000
119. Centers for Disease Control and Prevention, Unexplained Deaths and Encephalitis Projects Working Group, Atlanta, GA, September 2000
120. University of Kansas, Kansas City, KA, October 2000
121. Cold Spring Harbor Laboratory, The Challenge of Infectious Diseases in the 21<sup>st</sup> Century, Cold Spring Harbor, NY, October 2000
122. USDA Meeting on Agricultural Bioterrorism, Port Jefferson, NY, October 2000
123. University of Brisbane, Brisbane, Australia, November 2000



124. Queensland Centre for Schizophrenia Research, Wacol, Australia, November 2000
125. U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD, December 2000
126. American Uveitis Society, Vail, CO, January 2001
127. Fred Hutchinson Cancer Research Center, Seattle, WA, January 2001
128. Centers for Disease Control and Prevention/National Institutes of Health West Nile Virus National Planning Meeting, Charlotte, NC, February 2001
129. Microbiology, Immunology and Toxicology of Autism and Other Neurodevelopmental Disorders, Banbury Center of Cold Spring Harbor, Lloyd Harbor, NY, February 2001
130. California Institute of Technology, Pasadena, CA, April 2001
131. International Lyme Disease Conference, Farmington, CT, April 2001
132. New York Academy of Sciences West Nile Virus Conference, White Plains, NY, April 2001
133. 101<sup>st</sup> General Meeting of the American Society of Microbiology, Orlando, FL, May 2001
134. Annual Meeting of the Council of State and Territorial Epidemiologists and Association of Public Health Laboratories, Portland, OR, June 2001
135. Northeast Association for Clinical Microbiology and Infectious Disease Andover, MA, June 2001
136. Twentieth Summer Symposium in Molecular Biology, University Park, PA, June 2001
137. VII<sup>th</sup> World Congress of Biological Psychiatry, Berlin, July 2001
138. Yale University, New Haven, CT, October 2001
139. Waksman Foundation Lecture, Annual Meeting, Rocky Mountain Branch of the American Society for Microbiology, Denver, CO, October 2001
140. Waksman Foundation Lecture, Texas Branch of the American Society for Microbiology, San Antonio, TX, November 2001
141. Forum on Viral, Bacterial and Parasitic Diseases, Osaka, Japan, January 2002
142. Waksman Foundation Lecture, Florida Branch of the American Society for Microbiology, Cocoa Beach, FL, February 2002
143. Infections of the Nervous System, Society for General Microbiology, Warwick, England, April 2002
144. Waksman Foundation Lecture, New York State Branch of the American Society for Microbiology, Albany, NY March 2002
145. Gordon Research Conference, Ventura, CA, March 2002
146. Harold C. Neu Infectious Disease Conference, Naples FL, April 2002
147. Viral Pathogenesis and Immune Control Symposium to honor Professor Volker ter Meulen, Universität Würzburg, Würzburg, Germany, June 2002
148. Novartis Foundation Symposium on Autism, London, UK, June 2002
149. Ellison Medical Foundation, Palo Alto, CA, September 2002
150. The Genomic Revolution and Type 1 Diabetes, Carousel of Hope Symposium, Los Angeles, CA October 2002
151. Linking Infectious Agents and Chronic Conditions, Institute of Medicine, Washington, DC, October 2002
152. Waksman Foundation Lecture, Hawaii Branch of the American Society for Microbiology, Honolulu, HA, November 2002
153. Hawaii Biotech, Honolulu, HA, November 2002
154. Toward a More Unified Understanding of Infectious Disease, Banbury Center of Cold Spring Harbor, Lloyd Harbor, NY, March 2003
155. NIH National Institute of Child Health and Human Development, Detroit, MI, March 2003
156. Waksman Foundation Lecture, Michigan Branch of the American Society for Microbiology, Ann Arbor, MI, April 2003
157. Waksman Foundation Lecture, Indiana Branch of the American Society for Microbiology, Spring Mill, IN, April 2003
158. University of Medicine and Dentistry, Newark, NJ, April 2003
159. Institute for Genomics and Bioinformatics, University of California, Irvine, CA, April 2003
160. American Society for Microbiology, Washington, DC, May 2003





161. Biodetection Technologies, Arlington, VA, June 2003
162. International Congress on Emerging Zoonoses, Ames, IA, September 2003
163. International Society for Neuropathology, Turin, Italy, September 2003
164. Public Health Research Institute, Newark, NJ, November 2003
165. John Merck Fund: Exploring Opportunities for Interdisciplinary Linkages in Neurodevelopment and Environmental Health Sciences, Boston, MA, November 2003
166. National Security and Biological Research, New York Academy of Sciences, New York, NY, November 2003
167. Department of Health and Human Services Autism Summit Conference, Washington, DC, November 2003
168. Hong Kong University, Hong Kong, December 2003
169. Sino-US Public Health Management Forum, Ministry of Science and Technology, Beijing, China, December 2003
170. Peking Medical College, Beijing, China, December 2003
171. Shanghai Institute of Biological Sciences, Shanghai, China, December 2003
172. Inauguration of Guangzhou Institute of Biomedicine and Health, China, December 2003
173. Norwegian Institute of Public Health and University of Oslo, February 2004
174. Earth Institute State of the Planet Conference, New York, NY, March 2004
175. Walter Reed Conference on Basic Aspects of Vaccines, Bethesda, MD, April 2004
176. Inauguration of Neuroimmunology Study Group, New York Academy of Sciences, New York, NY, May 2004
177. Wadsworth Center, New York State Department of Health, Albany, NY, June 2004
178. Curtin University of Technology, Perth, Australia, July 2004
179. Asia-Pacific Forum on Tropical Health Innovation, Cairns, Australia, July 2004
180. Australian Animal Health Laboratory, Geelong, Australia, July 2004
181. International Society for Neurovirology, Sardinia, September 2004
182. 4th Croatian Congress on Infectious Diseases, Opatija, Croatia, October 2004
183. 10th Annual Current Trends in Autism Conference, Danvers, MA, October, 2004
184. US-Japan Foundation, Kyoto, Japan, December 2004
185. Inauguration of Institut Pasteur de Shanghai, Shanghai, China, December, 2004
186. Distinguished Lecturer, Centers for Disease Control, Atlanta, GA, February 2005
187. National Microbiology Laboratory, Winnipeg, Canada, February 2005
188. Autism Think Tank, Simons Foundation, Cure Autism Now, National Alliance for Autism Research, National Alliance for Research on Schizophrenia and Depression, New York, NY, February 2005
189. American Society for Microbiology Biodefense Meeting, Baltimore, MD, March 2005
190. Graduate Student Symposium, Texas A&M University System Health Science Center, College Station, TX, April 2005
191. International Meeting for Autism Research, Boston, MA, May 2005
192. SUNY Stony Brook, Stony Brook, NY, May 2005
193. Albert Einstein College of Medicine, NY, NY, June 2005
194. NIH Blue Ribbon Panel, Advanced Product Development for Multiplex Infectious Disease Diagnostics, Bethesda, MD, June 2005
195. Lakeside Talk, Bohemian Grove, Monte Rio, CA, July 2005
196. Early Events in Viral Infection, Banbury Center of Cold Spring Harbor, Cold Spring Harbor, NY, September 2005
197. Annual Meeting Wyeth Vaccine Discovery Group, Park Ridge, NJ, October 2005
198. Virology Africa 2005, Cape Town, South Africa, November 2005
199. Sun Yat-Sen University, International Biomedicine Day, Guangzhou, China, December 2005
200. Centers for Disease Control, Beijing, China, December 2005
201. New York University Biotechnology Study Center, New York, NY February 2006



202. Diagnostics and Pathogen Detection, Fourth American Society for Microbiology Biodefense Meeting, Washington, DC, February 2006
203. Hong Kong University, Hong Kong, March 2006
204. Inaugural Lecture, Beijing Center for Infectious Diseases, Beijing, China, March 2006
205. University of Chicago, Chicago, IL, April 2006
206. Presidential Speaker, Triological Society, Chicago, IL, May 2006
207. American Society for Microbiology, Orlando, FL, May 2006
208. PharmAthene Biodefense Roundtable, Washington DC, May 2006
209. Centro Nacional de Microbiologia, Instituto de Salud "Carlos III", Madrid, Spain June 2006
210. Sarah Lawrence College, Bronxville, NY, June 2006
211. Center for Biosecurity, University of Pittsburgh, Baltimore, MD, July 2006
212. ScienceFoo, Googleplex, Mountain View, CA August 2006
213. Annual Symposium, Center for Investigating Viral Immunity and Antagonism, New York, NY, September 2006
214. Filovirus Symposium, Winnipeg, Canada, September 2006
215. Albany Medical College, Albany, NY, October 2006
216. 2006 Annual Meeting of the Northeast Biodefense Center and New England Regional Center of Excellence in Biodefense and Emerging Infectious Diseases, Bolton Landing, New York, October 2006
217. Ernst Klenk Symposium, Cologne, Germany, November 2006
218. Carnegie Biodefense Series, Princeton University, Princeton, NJ, December 2006
219. Institute of Medicine, Infectious Disease Surveillance and Detection: Assessing the Challenges - Finding Solutions, Washington, DC, December 2006
220. Pacific Health Summit, Beijing, January 2007
221. World Health Organization, Geneva, Switzerland, February 2007
222. State University of New York, Syracuse, NY, February 2007
223. Emory University, Atlanta, GA, March 2007
224. Agilent Technologies, Palo Alto, CA, March 2007
225. Stanford University, Palo Alto, CA, March 2007
226. The Scripps Research Institute, La Jolla, CA, April 2007
227. University of Texas Health Science Center, Memphis, TN, April 2007
228. National Meeting of the Regional Centers of Excellence in Biodefense and Emerging Infectious Diseases, St. Louis, MO, April 2007
229. Institute of Medicine, Autism and the Environment, Washington, DC, April 2007
230. Pan American Society for Clinical Virology Molecular Virology Workshop, Clearwater Beach, FL, April 2007
231. National Institutes of Health, New Techniques in HIV-1 Detection, Bethesda, MD, June 2007
232. Christophe Merieux Symposium, Les Pensières, France, June 2007
233. National Institutes of Health, NHLBI Lung Microbiome Workshop, Bethesda, MD, July 2007
234. Duke University, Durham, CA, August 2007
235. University of North Carolina, Chapel Hill, NC, August 2007
236. Sarah Lawrence College Presidential Inauguration Symposium, October 2007
237. Rocky Mountain RCE in Biodefense and Emerging Infectious Diseases, Fort Collins, CO, October 2007
238. Society for Advancement of Chicanos and Native Americans in Science, Kansas City, KS, October 2007
239. 8th International Symposium on Neurovirology, San Diego, CA, October 2007
240. New York University Science, Health and Environmental Reporting Program, New York, NY, October 2007
241. Science Magazine Webinar, October 2007
242. Henry Stewart Talks Online Lecture Series, October 2007
243. International Conference on Emerging Zoonoses, Limassol, Cyprus, November 2007
244. University of Pennsylvania, Philadelphia, PA, December 2007



245. Memorial Sloan Kettering Cancer Center, New York, NY, January 2008
246. Banbury Center, Lloyd Harbor, NY, February 2008
247. Clinical Antiviral Study Group, Bethesda, MD, February 2008
248. Google Foundation, San Francisco, CA, February 2008
249. X International Symposium on Respiratory Viral Infections, Singapore, February 2008
250. International Conference on Emerging Infectious Diseases, Atlanta, GA, March 2008
251. National Institutes of Health, Science in the Public Health Series, Diagnosis in the 21st Century: Know Today or No Tomorrow?, Bethesda, MD, April 2008
252. Center for Zoonoses Research, University of Illinois, Champaign-Urbana, IL, April 2008
253. OCS Molecular Biology Seminar, MITRE, Arlington, VA, April 2008
254. Microarrays in Medicine, Boston, MA, May 2008
255. The Network of Excellence on Epizootic Animal Diseases, Brescia, Italy, June 2008
256. NIH US-Japan Meeting, Baltimore, MD, July 2008
257. American Society for Virology Plenary Lecture, Ithaca, NY, July 2008
258. ScienceFoo, Googleplex, Mountain View, CA, August 2008
259. Institut Pasteur, Infectious Diseases of the Nervous System, Paris, France, September 2008
260. 8th Awaji International Forum on Infection and Immunity, Awaji, Japan, September 2008
261. Biomedical Advanced Research and Development Authority, Washington, DC, October 2008
262. Childhood Diabetes Foundation, Los Angeles, CA, October 2008
263. Infectious Disease Symposium at SUNY-Buffalo and the Center of Excellence in Bioinformatics and Life Sciences, October 2008
264. Workshop on Infection and Immunity, University of Toledo, Toledo, OH, October 2008
265. PopTech, Camden, ME, October 2008
266. 48<sup>th</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy, Infectious Diseases Society of America 46th Annual Meeting, Washington, DC, October 2008
267. Workshop on Neonatal Sepsis, Bill and Melinda Gates Foundation, Seattle, WA, October 2008
268. Forum on Science and Biothreats, National Center for Foreign Animal and Zoonotic Disease Defense, Lansdowne, VA, November 2008
269. Singapore General Hospital, Singapore, December 2008
270. NIH/CDC Conference on New Technologies to Identify Causes of Diseases, Bethesda, MD, December 2008
271. The Environmental Determinants of Diabetes in the Young, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, December 2008
272. Distinguished Lecturer, University of Medicine and Dentistry of New Jersey, Newark, NJ, December 2008
273. 19th Challenge in Virology, Saanen, Switzerland, January 2009
274. American Association for the Advancement of Science, Chicago, IL, February 2009
275. Distinguished Lecturer, Pennsylvania State University, University Park, PA, March 2009
276. Immunology and Pathogenesis of Viral Hemorrhagic Fevers Symposium, Emory University Vaccine Center, Atlanta, GA, March 2009
277. Johns Hopkins Neuroimmunology Seminar Series, Baltimore, MD, March 2009
278. Tulane University Center for Infectious Diseases, New Orleans, LA, March 2009
279. Interdepartmental Genetics and Interdepartmental Microbiology Workshop on Microbial Metagenomics, Iowa State University, Ames, IA, April 2009
280. Advances in Pathogenesis, Diagnosis and Prevention of Emerging Zoonotic Agents Symposium, Kansas State University College of Veterinary Medicine, Manhattan, KS, April 2009
281. 109<sup>th</sup> General Meeting of the American Society for Microbiology, Philadelphia, PA, May 2009
282. California NanoSystems Institute Lecture, University of California, Los Angeles, CA, May 2009
283. 12<sup>th</sup> Annual Meeting, American Society of Gene Therapy, San Diego, CA, May 2009
284. Eighth International Workshop on Advanced Genomics, Tokyo, Japan, June 2009
285. Keynote, Guardian Activate 2009, London, UK, July 2009
286. Australian Society for Microbiology 2009, Perth, Australia, July 2009



287. Keynote, 4<sup>th</sup> Symposium on Virology, Smögen, Sweden, August 2009
288. Keynote, 8th International Congress of Veterinary Virology, European Society for Veterinary Virology, Budapest, Hungary, August 2009
289. National Academy of Sciences, Washington, DC, September 2009
290. Conference of the DIM-Malinf, Paris, France, September 2009
291. Bats and Emerging Viral Diseases Workshop, The Division of Microbiology and Infectious Diseases, National Institutes of Allergy and Infectious Diseases, September 2009
292. 49<sup>th</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy, American Society of Microbiology, San Francisco, CA, September 2009
293. Distinguished Speakers Seminar Program, Walter Reed Army Institute of Research, Silver Spring, MD, September 2009
294. Rockefeller University, New York, NY, September 2009
295. Kinyoun Lecture, National Institute of Allergy and Infectious Diseases, Bethesda, MD, October 2009
296. Distinguished Lecture Series, Center for Autism Research, Philadelphia, PA, October 2009
297. American Association of Veterinary Laboratory Diagnosticians 52<sup>nd</sup> Annual Conference, San Diego, CA, October 2009
298. University of California Irvine, Irvine, CA, October 2009
299. 47<sup>th</sup> Annual Meeting, Infectious Diseases Society of America, Philadelphia, PA, November 2009
300. Weill Cornell Medical College, New York, NY, November 2009
301. Duke-National University of Singapore Emerging Infectious Diseases Inauguration Symposium, Singapore, December 2009
302. National University of Singapore, Singapore, December 2009
303. Communicable Diseases Centre, Singapore, December 2009
304. Changi General Hospital, Singapore, December 2009
305. St. Jude Pediatric Infectious Diseases Research Conference, Memphis, TN, February 2010
306. Institut Pasteur de Dakar, Dakar, Senegal, February 2010
307. American Society for Microbiology Biodefense and Emerging Diseases Research Meeting, Baltimore, MD, February 2010
308. Advances in Genome Biology and Technology Conference, Marco Island, FL, February 2010
309. Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY, March 2010
310. Society of General Microbiology Annual Meeting, Edinburgh, Scotland, March 2010
311. Defense Threat Reduction Agency, Fort Belvoir, VA, April 2010
312. University of Washington, Seattle, WA, April 2010
313. Bill and Melinda Gates Foundation, Seattle, WA, April 2010
314. Arizona State University, Tempe, AZ, April 2010
315. Genomes, Environments, Traits Conference, Cambridge, MA, April 2010
316. Infectious Diseases Society of New York Harold Neu Symposium, Bronx, NY, May 2010
317. Vanderbilt University School of Medicine Lamb Center, Nashville, TN, May 2010
318. Centers for Disease Control and Prevention Distinguished Lecture, Atlanta, GA, May 2010
319. Norwegian School of Veterinary Science, Oslo, Norway, June 2010
320. Public Intellectual Lecture, Columbia University, New York, NY, June 2010
321. National Center for Biotechnology Information, NIH, Bethesda, MD, June 2010
322. International Conference on Emerging Infectious Diseases, Atlanta, GA, July 2010
323. Human Microbiome Research Conference, St. Louis, MO, August 2010
324. Emerging and Re-emerging Vector-borne and Zoonotic Viral Infectious Diseases in Southeast Asia Meeting, US-Japan Viral Diseases Panel, Hanoi, Vietnam, September 2010
325. Institute of Medical Virology, University of Zurich, Zurich, Switzerland, September 2010
326. University of Medicine and Dentistry of New Jersey, Newark, NJ, September 2010
327. Weill Cornell Medical Center, New York, NY, September 2010





328. Roche Diagnostics Infectious Diseases Symposium, Vienna, Austria, September 2010
329. Novartis Diagnostics Symposium at the American Association of Blood Banks, October 2010
330. The 12th Western Pacific Congress of Chemotherapy and Infectious Diseases, Singapore, December 2010
331. Food and Drug Administration/Center for Drug Evaluation and Research, Silver Spring, MD, December 2010
332. Columbia University Department of Neurology, New York, NY, January 2011
333. Temple University, Philadelphia, PA, January 2011
334. Vaccine & Gene Therapy Institute, Portland, OR, February 2011
335. University of Texas at Austin, February 2011
336. First International One Health Congress, Melbourne, Australia, February 2011
337. Johns Hopkins University, Baltimore, MD, March 2011
338. New York Academy of Sciences, New York, NY, March 2011
339. Albert Einstein College of Medicine, Bronx, NY, March 2011
340. The Society for Virology 21<sup>st</sup> Annual Meeting, Freiburg, Germany, March 2011
341. University of Massachusetts Medical School, Worcester, MA, April 2011
342. University of California Irvine Translational Approaches in Cancer Therapeutics Conference, Irvine, CA, April 2011
343. New Jersey Medical School, Newark, NJ, May 2011
344. Joint Food and Agriculture Organization/International Atomic Energy Agency Division of Nuclear Techniques in Food and Agriculture, Vienna, Austria, May 2011
345. Clinical Immunology Society 2nd Annual Meeting, Chicago, IL, May 2011
346. American Society for Microbiology, New Orleans, LA, May 2011
347. IV International Symposium on Tropical Arboviruses and Viral Hemorrhagic Fevers, Belem, Brazil, May 2011
348. American Society for Mass Spectrometry, Denver, CO, June 2011
349. Whittemore Peterson Institute for Neuro-immune Disease, Reno, NV, June 2011
350. Singularity University, Moffett Field, CA, June 2011
351. Bronx Science Café, Bronx, NY, June 2011
352. Columbia University Department of Microbiology & Immunology, New York, NY, September 2011
353. International Congress of Virology, Sapporo, Japan, September 2011
354. Princeton University, Princeton, NJ, September 2011
355. The Banbury Center, Cold Spring Harbor Laboratory, September 2011
356. New York University, New York, NY, October 2011
357. PopTech, Camden, Maine, October 2011
358. Texas A&M Health Science Center, Temple, TX, October 2011
359. Norwegian Institute of Public Health, Oslo, Norway, October 2011
360. Virology Africa 2011 Conference, Cape Town, South Africa, November 2011
361. Northwestern University, Chicago, IL, November 2011
362. Centre for Food Safety, Food and Environmental Hygiene Department, Hong Kong, December 2011
363. Institute of Medicine, Washington, DC, December 2011
364. Bronx Lebanon Hospital, Bronx, NY, January 2012
365. New York University, New York, NY, January 2012
366. Stony Brook University, Stony Brook, NY, January 2012
367. National Institute for Neurological Disorders and Stroke, Bethesda, MD, February 2012
368. Public Health Preparedness Summit, Anaheim, CA, February 2012
369. International Conference on Emerging Infectious Diseases, Atlanta, GA, March 2012
370. Columbia University Club, New York, NY, March 2012
371. Royal Geographical Society, London, UK, March 2012





372. University of Maryland, Baltimore, MD, March 2012
373. APHL/CIDT Forum, Atlanta, GA, April 2012
374. Columbia University, New York, NY, April 2012
375. University of Iowa, Iowa City, IA, April 2012
376. TMT Partnership Symposium, San Diego, CA, May 2012
377. American Society for Microbiology General Meeting, San Francisco, CA, June 2012
378. Association of Professionals in Infection Control and Epidemiology, San Antonio, TX, June 2012
379. 2012 American Society for Microbiology General Meeting, San Francisco, CA, June 2012
380. International Association for Food Protection, Providence, RI, July 2012
381. 6th Annual Centers of Excellence for Influenza Research and Surveillance Network Meeting, New York, NY July 2012
382. Tsinghua University, Beijing, China, August 2012
383. China Centers for Disease Control, Beijing, China, August 2012
384. Peking Union Medical College, Beijing, China, August 2012
385. 52<sup>nd</sup> Annual Interscience Conference on Antimicrobial Agents & Chemotherapy, San Francisco, CA, September 2012
386. Global Health Security, Washington DC, September 2012
387. The Cornell Lecture, Ithaca, NY September 2012
388. Cold Spring Harbor/Wellcome Trust Sanger Institute, Cambridge, UK, September 2012
389. Yale Inaugural Immunobiology Graduate Student Symposium, New Haven, NY, September 2012
390. Chief of Staff of the Army's Strategic Studies Group, Arlington, VA, September 2012
391. 2012 Global Health Security Action Group Laboratory Network Unknown Pathogens Workshop, Toronto, Canada, October 2012
392. 2012 Shores Conference, Ft. Detrick, MD, October 2012
393. Emerging Infectious Diseases Symposium, Geelong, Australia, October 2012
394. THiNK 2012, Goa, India, November 2012
395. Gilden Lecture, Denver, Colorado, November 2012
396. Beth Israel Medical Center, New York, NY, November 2012
397. Memorial Sloan Kettering Cancer Center, December 2012
398. Institute of Medicine Forum on Microbial Threats, Washington, DC, December 2012
399. World Health Organization Scientific Consultation on Novel Coronavirus, Cairo Egypt, January 2013
400. University of Pennsylvania Department of Microbiology Seminar, Philadelphia, PA, January 2013
401. New York University Skirball Institute, New York, NY, January 2013
402. Colorado Infectious Disease Society of America Conference, Denver, CO, January 2013
403. Iona College, Thomas G. Bullen, CFC, Memorial Lecture Series in Science and Technology, New Rochelle, NY, April 2013
404. University of Washington, Seattle, WA, April 2013
405. Clinical Immunology Society, Miami, FL, April 2013
406. Fudan University, Shanghai, China, May 2013
407. Rockefeller University, New York, NY, May 2013
408. Keynote Speaker, 16<sup>th</sup> International Symposium of the World Association of Veterinary Laboratory Diagnosticians, Berlin, Germany, June 2013
409. International Symposium on Molecular Medicine and Infectious Disease, Drexel University, Philadelphia, PA, June 2013
410. University of North Carolina, Chapel Hill, NC, August 2013
411. Global Centre for Mass Gatherings Medicine Conference, Riyadh, Saudi Arabia, September 2013



412. Science Speed Dating: Seven Scientists for Seven Minutes, Sundance Film Network, New York, NY, September 2013
413. Zoetis Key Opinion Leaders Meeting, Kalamazoo, MI, October 2013
414. 2020 and beyond: Envisioning the Future of Infectious Disease Testing, Wadsworth Center, Albany, NY, October 2013
415. Rush Medical College Distinguished Alumnus Award, Chicago, IL, October 2013
416. 13<sup>th</sup> Annual Nebraska Center for Virology Symposium, Lincoln, NE, October 2013
417. Children's Hospital of Philadelphia Grand Rounds, Philadelphia, PA, October 2013
418. Simonyi Lecture, Oxford University, Oxford, UK, November 2013
419. Rocky Mountain Labs Seminar, Hamilton, MT, November 2013
420. Rocky Mountain Labs Public Lecture, Hamilton, MT, November 2013
421. Columbia Neurological Institute Grand Rounds, New York, NY, November 2013
422. Columbia Neurology Epilepsy Research Conference, New York, NY, November 2013
423. Vanderbilt University Student Invited Speaker, Nashville, TN, February 2014
424. Norwegian Institute of Public Health, Oslo, Norway, February 2014
425. City College of New York Department of Biology Seminar, New York, NY, March 2014
426. University of San Francisco Microbial Pathogenesis Seminar Series, San Francisco, CA, March 2014
427. Novartis Infectious Disease Research Division Seminar, Emeryville, CA, March 2014
428. Stanford ME/CFS Initiative, Stanford, CA, March 2014
429. IACFS/ME Scientific Conference, San Francisco, CA, March 2014
430. Stanford University Pathology Grand Rounds, Stanford, CA, March 2014
431. Kansas State University Division of Biology Lecture, Manhattan, KS, March 2014
432. McLaughlin Keynote Lecture, 6th International Symposium on Filoviruses, Galveston, TX, March 2014
433. IXth Conference Louis Pasteur, Institut Pasteur, Paris, France, April 2014
434. Society for General Microbiology, 10 Questions in Virology, Liverpool UK, April 2014
435. American Society for Microbiology General Meeting, Boston, MA, May 2014
436. Gates Foundation Genital Inflammation, HIV Transmission Risk, Preterm Birth and the Vaginal Microbiome Meeting, New York, NY, June 2014
437. Hilary Koprowski Symposium, Philadelphia, PA, June 2014
438. Wellcome Trust Public Lecture, New Delhi, India, June 2014
439. Animal-Human Interface in Infectious Diseases at the India National Science Academy, New Delhi, India, June 2014
440. Bangalore Science Forum, Bangalore, India, June 2014
441. Kenneth Rainin Foundation Symposium, San Francisco, CA, July 2014
442. Systems Biology of Infectious Diseases Conference, Seattle, WA, August 2014
443. CFS/ME Research Collaborative Scientific Conference, Bristol, UK, September 2014
444. Interscience Conference on Antimicrobial Agents and Chemotherapy, Meeting, Washington DC, September 2014
445. Amazonian Conference on Emerging and Infectious Diseases, Institut Pasteur, Cayenne, French Guiana, September 2014
446. Infectious Disease Society of America Closing Plenary, Philadelphia, PA, October 2014
447. American Neurological Association Annual Meeting, Baltimore, MD, October 2014
448. Molecular Microbiology and Immunology Seminar, Brown University, Providence, RI, October 2014
449. Public Health Power Hour, Columbia University, New York, NY, October 2014
450. National Institutes of Health National Science Advisory Board for Biosecurity meeting, Bethesda, MD, October 2014
451. KKR Chief Investment Officer Conference, Washington DC, October 2014
452. Mendel Medal Lecture, Villanova University, Villanova, PA, October 2014



453. Nanoempires in New York: Microbes in Health and Disease, Cornell University, New York, NY November 2014
454. Center for Translational Sciences Keynote, Institut Pasteur, Paris, France, February 2015
455. The Bernard Fields Lectures on Microbial Pathogenesis, Scripps University, La Jolla, CA February 2015
456. Center for Virus Research Seminar, University of California, Irvine, CA, February 2015
457. Research at P&S Seminar, Columbia University, New York, NY, March 2015
458. Microbiology, Immunology, and Pathology Student Invited Lecture, Colorado State University, Fort Collins, CO, March 2015
459. Michigan State Virology Lecture, East Lansing, MI, March 2015
460. University of Michigan Microbiology & Immunology Departmental Seminar, Ann Arbor, MI, March 2015
461. Keystone Symposium on Viruses and Human Cancer, Big Sky, MT, April 2015
462. New Genomic Solutions for Conservation Problems Workshop, Sausalito, CA, April 2015
463. Swedish Schizophrenia Society Meeting, Karolinska Institute, Solna, Sweden, April 2015
464. Centre for Infectious Disease Dynamics Seminar, Pennsylvania State University, State College, PA, May 2015
465. Friday Lecture, Rockefeller University, New York, NY, May 2015
466. Evening Lecture, New York Genome Center, New York, NY, June 2015
467. New York Academy of Sciences, Microbes in the City: mapping the urban metagenome Keynote, New York, NY, June 2015
468. Pathogens in Host Microbiota Conference, Paris, France, June 2015
469. American Society for Virology, Evolution and Ecology of Viruses Workshop, London, ON, Canada, July 2015
470. The Emergence of New Epidemic Viruses, Rockville, MD, August 2015
471. CDC International Conference on Emerging Infectious Diseases 2015, Atlanta, GA, August, 2015
472. CDC Seminar on public health threats posed by rodent populations, National Center for Environmental Health, Atlanta, GA, August, 2015
473. School-wide seminar, Albert Einstein College of Medicine, New York, NY, September 2015
474. China Centers for Disease Control, Beijing, China, September 2015
475. Wuhan Institute of Virology, Chinese Academy of Sciences, Wuhan, China, September 2015
476. Dr. Kenneth S. and Audrey S. Gould Lecture in Cellular and Molecular Medicine, Rutgers University, New Brunswick, NJ, October 2015
477. Pew Scholars Program 30<sup>th</sup> Reunion, Seven Mile Beach, Grand Cayman, November 2015
478. Japanese Society for Virology Symposium, Fukuoka, Japan, November 2015
479. Institute for Life Sciences Lecture, Bhubaneswar, India, December 2015
480. Institute for Life Sciences Public Lecture, Bhubaneswar, India, December 2015
481. Puerto Rico Brain Trust on Tropical Diseases, San Juan, Puerto Rico, February 2016
482. American Museum of Natural History Microbiome Teacher Institute, New York, NY, February 2016
483. Where Will the Next Pandemic Come From? New York Academy of Medicine, New York, NY, February 2016
484. St. Jude Children's Research Hospital Danny Thomas Lecture, Memphis, TN, March 2016
485. Special Seminar Series on the Future of Epidemiology, Columbia University, New York, NY, April 2016
486. Keynote, History, Culture and Epidemiological Models for Emerging Viral Diseases, American Museum of Natural History, New York, NY, May 2016
487. IBM TJ Watson Research Center Distinguished Lecture Series, Hawthorne, NY, June 2016
488. Wellcome Genome Campus- Virus Genomics and Evolution Conference, Hinxton, UK, June 2016
489. ASM Microbe, Boston, MA, June 2016
490. American Museum of Natural History SciCafe, New York, NY, June 2016
491. One Health Seminar, University of California, Davis, CA, July 2016



492. Global Virome Project Conference, Bellagio, Italy, August 2016
493. National Emerging Infectious Diseases Laboratory Inaugural Symposium, Boston, MA, September 2016
494. World Health Organization and Wellcome Trust Mosquito-Borne Viruses Meeting, London, UK, October 2016
495. HIV Dynamics and Replication Program Conference on Emerging Viruses: Origins, Biology, and Control of Transmission, National Cancer Institute, Frederick, MD, October 2016
496. The Zika Menace in the Americas Symposium, Brazilian National Academy of Medicine, Rio de Janeiro, Brazil, November 2016
497. Memorial Sloan Kettering Cancer Center Survivorship Outcomes and Risk Seminar, New York, NY, January 2017
498. Distinguished Virologist Lecture, Duke University, Durham, NC, March 2017
499. Yale University Epidemiology Seminar, New Haven, CT, March 2017
500. MITRE Virology Workshop, McLean, VA, March 2017
501. Columbia University Conference on Zika and the Global Health Security Agenda, New York, NY, April 2017
502. 6th London-Innsbruck Colloquium on Status Epilepticus and Acute Seizures, Salzburg, Austria, April 2017
503. International Atomic Energy Agency Consultancy Meeting, Vienna, Austria, April 2017
504. Association of American Physicians Annual Meeting, Chicago, IL, April 2017
505. 8th International Conference on Emerging Zoonoses, Manhattan, KS, May 2017
506. Science Philanthropy Alliance Influenza Workshop, Palo Alto, CA, May 2017
507. Neurology Grand Rounds, Rush Medical Center, Chicago, IL, June 2017
508. Insights into the Immunology of ME/CFS Symposium, Chicago, IL, June 2017
509. National Institutes of Health Special Interest Group Lecture on ME/CFS, Bethesda, MD, July 2017
510. Seminar, Department of Microbiology, University of Massachusetts, Amherst, MA, September 2017
511. Silverstein Lecture at Northwestern University, Evanston, IL, October 2017
512. Keynote Lecture for Virology Symposium, National Institute of Virology, Pune, India, October 2017.
513. Norman P. Salzman Memorial Symposium in Virology, Bethesda, MD, November 2017
514. Emerging Microbial Resistance Group Lecture, NIH, Bethesda, MD, March 2018
515. VIP Seminar "Small Game Hunting", University of North Carolina, Chapel Hill, NC, May 2018
516. Nankai University International Infection & Immunity Meeting, Nankai, China, June 2018
517. Lecture, Columbia University Global Center, Beijing, China, June 2018
518. Presentation, Research Advisory Committee on Gulf War Veterans' Illnesses, Veterans' Association, Washington, DC, September 2018
519. Panelist, "Contagion" movie discussion for Influenza Outbreak Week, Harvard University, Cambridge, MA, September 2018
520. Panelist, Institute for Infection and Immunity, Langfang, China, November 2018
521. Speaker, Shanghai Medical College Campus of Fudan University, November 2018
522. Presentation, Shenzhen Landwind Group Cooperation and Shenzhen Government, Shenzhen, China, November 2018
523. INA-RESPOND Network Steering Committee, Jakarta, Indonesia, December 2018
524. INA-RESPOND "Microbial Surveillance and Discovery" Presentation, Jakarta, Indonesia, December 2018
525. The Second Precision Medicine & Medical Care Aging International Forum, "Precision Medicine in Infectious Disease", Guangzhou, China, December 2018
526. Presentation, African Centers for Excellence in Bioinformatics, University of Sciences, Techniques, and Technology, Bamako, Mali, February 2019
527. Conferencia: Vigilancia y descubrimiento de Microbios, Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, March 2019



528. Understanding Emerging Viral Diseases and their Public Health Impact, “Microbial Discovery, Surveillance, and Diagnostics”. Geneva Centre for Emerging Viral Diseases 2<sup>nd</sup> Symposium, Geneva, Switzerland, April 2019.
529. Pathogen Discovery: From Genomics to Disease Recognition and Response, “Molecular Methods in Pathogen Discovery”. The University of Western Australia, Perth, Australia, May 2019.
530. Infection and Immunity Seminar Series, “The Global Virome Project in the era of Donald Trump”. The University of Sydney, Sydney, Australia, May 2019.
531. 2019 Oldstone Symposium, “A vision for a global immune system”. Scripps Research, La Jolla, CA, June 2019.
532. Infectious Disease Diagnostics for the 21<sup>st</sup> Century, “The Global Virome Project”. Colorado State University, Fort Collins, CO, July 2019.
533. India Today Conclave Mumbai, “Diary of a Virus Hunter: Cutting-edge research on cancer, encephalitis, autism, fatigue (and almost everything else)”. Mumbai, India, September 2019.
534. Centers for Disease Control – Division of High-Consequence Pathogens and Pathology, “And Now for Something Completely Different: A microbe hunter turns to ME/CFS”. Atlanta, GA, September 2019.
535. The 19<sup>th</sup> Annual Rocky Mountain Virology Meeting, “Keynote Speech: Assembling a Global Immune System”. Colorado State University Mountain Campus in Pingree Park, October 2019.
536. Advances in Diagnostics and Impact on One Health, AAVLD Plenary Session, “One Health and the Omics Age”. Providence, RI, October 2019.
537. Plenary Speaker, 2<sup>nd</sup> International Symposium for One Health Research. Sun Yat-Sen University, Guangzhou, China, November 2019
538. Workshop on AFM Preparedness: Addressing EV-D68 and Other AFM-Associated Enteroviruses, “Peptide Microarray Platform for Diagnosis of Enterovirus Infection in AFM”, Rockville, MD, February 2020.
539. Cold Springs Harbor Double Helix Day, “DNA & Climate Change”, Cold Springs, NY, February 2020.
540. Center for Global Humanities Seminar Series, “Lessons of COVID-19”, University of New England, Portland, ME (via remote), April 2020.

## FELLOWSHIP AND GRANT SUPPORT

### ***Fellowships***

National Multiple Sclerosis Society Postdoctoral Fellowship, 1984-87  
 Clinical Investigator Development Award, National Institutes of Health, National Institute of Neurological and Communicative Disorders and Stroke, 1987-92

### ***Research Grants***

#### Pending Support

U01

12/01/20 to 11/30/25

NIH/NIAID

Investigation and treatment of undiagnosed neuroinflammatory diseases

Clinical cases of undiagnosed neuroinflammatory disease will be evaluated using VirCapSeq-VERT, BacCapSeq, and serology to test for the presence of infectious agents.

Role: Subcontract Co-I

HR001120S0016

11/01/20 to 10/31/24

Department of Defense/DARPA

FET (Fluidic Enzymatic/Electronic Tag-Based) Detector





The development of two point-of-care diagnostic platforms using FET technology that will detect a wide range of DoD-relevant viral and bacterial agents. The focus will be on agents that cause either respiratory illness or are vector-borne.

Role: Co-I

U01

07/01/21 to 06/30/24

NIH/NIAID

Asian and American centers for arbovirus research and enhanced surveillance (A2CARES)

Analysis of samples collected from the A2CARES program using VirCapSeq-VERT, BacCapSeq, and serological arrays.

Role: Subcontract Co-I

### Active Contract and Grant Support

I01CX0011329

09/30/19 to 09/30/23

Veterans Affairs

Post-exertion malaise in GWI: Brain, autonomic and behavioral interactions

The project will work toward identifying pathogens and biomarker discovery in Gulf War Illness (GWI) using metabolomics analyses for multiple timepoints in an exercise protocol model and compared to ME/CFS.

Role: Subcontract Co-I

1U54AI138370-01

09/22/17 to 08/31/22

NIH/NIAID

*Center for Solutions for ME/CFS*

The Center for Solutions for ME/CFS is a multi-institutional, inter-disciplinary research center dedicated to understanding the biology of ME/CFS and developing diagnostic tests and methods for preventing and treating disease.

GW180150

07/01/19 to 06/30/22

DoD CDMRP

*Metabolomics in Gulf War Illness: A Systems Biology Approach to Dissecting Mechanisms of Disease*

The project will work towards identifying pathogens and biomarker discovery in Gulf War Illness (GWI) using metabolomics analyses for multiple timepoints in an exercise protocol model.

NIH/NICHD

R01 HD090051

07/01/17 to 06/30/22

*Infection, Fever and Immunity and Offspring ADHD in a Population-Based Pregnancy/Birth Cohort*

This project will explore of prenatal infection, fever and immunity in the pathogenesis of ADHD in a large prospective pregnancy/birth cohort in Norway.

PI: Mady Hornig

INV-006216

03/01/20 to 02/28/21

Bill & Melinda Gates Foundation

A sensitive, specific, deployable PCR test for SARS-CoV-2

The project will focus on the development of highly-sensitive, scalable PCR diagnostic tools in-2 outbreak in China.

HDTRA1-17-C-009

02/02/17 to 06/30/20

University of Texas Medical Branch/DoD-DTRA

Determination and Understanding of Quantitative Infectious Dose for Ebola Virus

The goal of this project is to discovery mechanisms of tolerance and to identify and validate interventions to induce tolerance to infection.

Role: Subcontract Co-I



IS-4903-16C 10/01/16 to 06/30/20  
US-Israel Binational Agricultural Research and Development Fund (BARD)  
*Development of Surveillance and Vaccination Means to Combat TiLV - a Novel RNA Virus Lethal to Tilapia*  
PI: Eran Bacharach

51897 03/08/18 to 06/30/20  
Beroni Group  
The utility of the Arbo-Viro-Plex rRT-PCR test in China  
To use the Arbo-Viro-Plex rRt-PCR assay to differentiate cases of Zika virus, dengue virus, chikungunya virus, and West Nile virus within the territory of China.

U19AI109761 03/01/14 to 04/30/20  
NIH/NIAID  
*Center for Research in Diagnostics and Discovery (Center for Excellence in Translational Research)*  
Expanding methods for AMR biomarker discovery, application of Complementary Metal-Oxide-Semiconductor (CMOS) diagnostic microarrays for faster assessment, and linkages to public health laboratories.

Jane Botsford Johnson Foundation  
Gift  
*The Johnson Autism Program at Columbia University*  
Determine how the microbiome, xenobiotics, toxins and the immune system contribute to autism and related disorders.

[Private Donors]  
Gift  
*The Microbe Discovery Project*  
Identify factors that contribute to the onset of Chronic Fatigue Syndrome/Myalgic Encephalomyelitis.

Simmaron Research  
Gift  
*Luminex, Proteomic and Metabolomic Discovery in Cerebrospinal Fluid of Patients with CFS/ME, Phase 2*  
Cerebrospinal fluid from subjects with CFS/ME and controls will be analyzed using Luminex technology and methods for unbiased proteomics and both targeted and unbiased metabolomics.

Pending Contract and Grant Support  
R01 07/01/19 to 06/30/24  
NIH/MGH Institute (Wood)  
*Using topological mapping of multi-omic data to identify underlying mechanism of post-stroke fatigue*  
The goal is to use topological data analysis using multi-omic data to identify PSF-related -omic signatures that could shed light on PSF mechanisms, identify potential PSF biomarkers, and identify novel targets for future intervention.  
Role: Co-I

Past/Completed Contract and Grant Support  
HR0011-17-2-0009  
Defense Advanced Research Projects Agency  
*THUNDER: Tolerant Hosts Using Novel Drug-Enhanced Resilience*



The goal of this project is to discover mechanisms of tolerance and to identify and validate interventions to induce tolerance to infection.

OPP1163230

Bill and Melinda Gates Foundation

*Optimization of Sequence-Based Microbial Surveillance*

The overarching objective of this program is to enable investigators to determine the bacteria and viruses that contribute to morbidity and mortality in the developing world through targeted sequence analysis of samples collected from living as well as deceased subjects.

336384

Simons Foundation

*Simons Foundation CII Autism Program on Maternal and Child Infection and Immunity*

Address the role of genetic and epigenetic factors in ASD using a well-characterized, prospective population cohort, detailed questionnaires that include nutritional and other exposure data, optimally collected pre-, peri- and postnatal biological specimens and state-of-the-art analytical tools.

PI: Mady Hornig and W. Ian Lipkin

Dates: 09/01/14 to 08/31/18

The Steven & Alexandra Cohen Foundation

*Cohen Lyme Project*

Exploring the role of tick-borne bacteria and viruses in Lyme disease and chronic Lyme disease by determining the tick microbiome at sites where there is a high incidence of human disease and the incidence of human infection with agents identified through tick microbiome studies.

Dates: 01/31/16 to 06/30/18

Chronic Fatigue Initiative

*Epigenetic analysis of CFI PBMC DNA*

The objective of this project is to explore the epigenetics of CFS/ME through assays of PBMC DNA.

Dates: 08/01/16 to 05/31/18

Chronic Fatigue Initiative

*TruCulture Immune Profiling in CFS/ME*

The objective of this project is to obtain a more accurate representation of immunological function in ME/CFS.

Dates: 08/01/16 to 05/30/18

DP1HD086071

NIH

*Control of the Neonatal Septisome and Hydrocephalus in sub-Saharan Africa*

Subaward to Columbia (Lipkin) from Pennsylvania State University

CII researchers will pursue various analyses on samples of hydrocephalus from the CURE Children's Hospital of Uganda with the objective of identifying biomarkers of inflammation and footprints of pathogens implicated in post-infectious hydrocephalus.

PI: Steven Schiff

Dates: 02/01/16 to 01/31/18

Zoetis (formerly Pfizer)

*Master Agreement for Veterinary Research*

Enhance the ability to detect and rapidly characterize novel infectious agents, naturally emergent or deliberately engineered and provide insights into unexplained acute infectious diseases.



Dates: 12/27/12 to 12/26/17

R56AI120724

NIH/NIAID

*Microbial Discovery and Immunity in ME/CFS*

Characterize the microbiome in ME/CFS.

Dates: 08/14/15 to 07/31/17

KSUNI S11045.01

Department of Homeland Security

*Center of Excellence for Emerging and Zoonotic Animal Disease (CEEZAD)*

PI: Jurgen Richt

Subcontract to Columbia (Lipkin) from Kansas State University

Develop technologies for diagnosis, surveillance and discovery to protect US agriculture through rapid detection of newly emerging agents and implementation of operator-safe assay platforms.

Dates: 07/01/10 to 06/30/17

HSHQDC-15-C-00064

Battelle National Biodefense Institute/DHS

*Transcriptional analysis of burkholderia pseudomallei infected nonhuman primates*

The goal of this project is to determine the transcriptional profiles of nonhuman primates (NHPs) throughout the course of infection with *Burkholderia pseudomallei*.

Dates: 06/10/16 to 4/30/17

HHSN272201400005C

NIAID

*Systems biology of innate immunity and vaccination*

PI: John Treanor

In this project we will use RNAseq and advanced computational methods to define transcriptional responses in ferrets infected with influenza viruses of varying degrees of virulence.

Dates: 06/01/16 to 03/31/17

Ministry of Agriculture of the Kingdom of Saudi Arabia

*Technical Services Contract on Technical Cooperation in Diagnosis and Surveillance of Zoonotic Diseases*

Training Saudi veterinarians and technical staff in diagnosis of MERS-CoV in domestic animals and pets, and technical support to veterinary laboratories in diagnostic diseases.

Dates: 02/10/15 to 02/09/17

R56 NS086122-01A1

NIH/NINDS

*Infection, fever and immune signatures in an autism birth cohort*

This project will investigate the role of infection, immunity and inflammation in autism.

Dates: 09/30/14 to 08/31/16

PI: Mady Hornig and W. Ian Lipkin

Castleman's Awareness & Research Effort

*IMCD Viral Discovery Project*

Identifying novel viral sequences associated with iMCD through high-throughput RNA sequencing of lymph node tissue from affected patients.

Dates: 08/11/15 to 12/31/16



Zoetis (formerly Pfizer)

*Master Agreement for Veterinary Research*

Enhance the ability to detect and rapidly characterize novel infectious agents, naturally emergent or deliberately engineered and provide insights into unexplained acute infectious diseases.

Dates: 12/27/12 to 12/26/16

U01 NS047537

NIH/NINDS

Gene Environment Interactions in an Autism Birth Cohort

Establish a 100,000 child prospective birth cohort in Norway, collect clinical data and samples, map the natural trajectory of neurodevelopmental disorders, and establish a foundation for determining the role of gene-environment interactions in pathogenesis of neurodevelopmental disorders.

Dates: 09/30/03 to 02/29/16

2014-3-29

Sloan Foundation

Pathogen Surveillance in NYC Rodents

The goal of this project is to determine the microflora of rats and mice in proximity to densely populated and high traffic areas in New York City.

Dates: 04/01/14 to 04/01/16

IS-4583-13

US-Israel Binational Agricultural Research and Development Fund

*Identification of the Etiological Agent of Tilapia Disease in the Lake of Galilee*

Columbia University's portion of the work will include high throughput sequencing of the genome of the pathogen, isolated from diseased tilapines and tissue culture.

Dates: 10/01/13 to 12/31/15

PI: Eran Bacharach

PH CU11-2659

(Private donor)

*Chronic Fatigue Initiative Pathogen Discovery and Pathogenesis Program*

This blinded, multi-center analysis will identify pathogens and define the relationship of these agents, and host responses to them, to the development of Chronic Fatigue Syndrome

Dates: 08/02/11 to 02/28/15

PI: Mady Hornig

U54 AI057158

NIH/NIAID

*Northeast Biodefense Center: Pathogen Discovery in Emerging Infectious Diseases*

Establish and implement high throughput molecular diagnostic tools for pathogen discovery in humans with emerging infectious diseases.

Dates: 05/01/09 to 02/28/15

Reckitt Benckiser LLC

*NYC Rodent Collection*

The purpose of this project is to provide 100 samples from rats and 100 samples from mice for drug resistance analysis.

Dates: 02/01/14 to 01/31/15

W911NF-10-1-0266

DOD





*Rapid Broad-Spectrum AntiMicrobial Immunity by Phage-Antibody Delivery and Selective VH Germline Stimulation*

Subcontract to Columbia (Lipkin) from Dana-Farber Cancer Institute

CII will identify an unknown pathogen as part of a larger biodefense exercise aimed at identifying and containing a potential outbreak of a respiratory pandemic.

Dates: 07/15/10 to 11/30/14

PI: Wayne Marasco

GHNA 0009 0001 000

USAID

*Predict Pathogen Discovery*

PIs: Jonna Mazet and Stephen Morse

Subcontract to Columbia (Lipkin) from UC Davis via EcoHealth Alliance

This project focuses on building capacity to detect disease-causing agents in wildlife samples in resource-limited settings.

Dates: 10/01/09 to 09/30/14

R01AI079231

NIH/NIAID

*Risk of Viral Emergence from Bats*

Subcontract to Columbia (Lipkin) from EcoHealth Alliance

This project focuses on the on the depth and breadth of the process of emergence within a key group of wildlife hosts associated with the recent emergence of SARS, Nipah, Hendra, Ebola and Marburg viruses.

Dates: 01/01/09 to 08/31/13

(Private donor)

*Chronic Fatigue Syndrome - Pathogen Discovery in Cerebral Spinal Fluid*

This pilot study will identify pathogens in the CSF of patients with CFS/ME or other neurologic disorders who received lumbar punctures in the process of the differential diagnosis of their disabling neurologic complaints or of healthy control subjects.

Dates: 07/09/12 to 06/30/13

U01 HD45954

NIH (NICHD)

*Staged Pathogen Discovery for Stillbirth Study*

Dates: 07/15/11 to 05/31/13

U54 AI057158-08-S1

NIAID/Northeast Biodefense Center

*Multi-center blinded analysis of XMRV/MLV in chronic fatigue syndrome*

This multi-center, multi-laboratory blinded analysis will address whether XMRV/MLV sequences are present in blood samples from CFS subjects and controls, and, if so, whether their presence is associated with CFS.

Dates: 09/15/10 to 02/28/13

Bill and Melinda Gates Foundation Contract 49714

*Etiologies of Childhood Pneumonia in The Gambia and South Africa*

Determine the spectrum of bacteria and viruses that cause acute respiratory disease in children in The Gambia and South Africa using MassTag PCR, GreeneChips and 454 pyrosequencing.

Dates: 11/01/08 to 12/31/12

Pfizer 36405

Pfizer



*PFIZER animal health master veterinary research for novel pathogens*

Identify pathogens in idiopathic animal diseases by multiplex diagnostic approaches.

Dates: 12/21/09 to 12/21/12

Google.Org Foundation

*Global Pathogen Surveillance and Discovery*

Establish multiplex pathogen detection methods at global disease hot-spot sites and identify novel agents through ongoing surveillance in outbreaks of human disease as well as animal host reservoirs using MassTag PCR, GreeneChips and 454 pyrosequencing.

Dates: 10/01/08 to 09/30/12

58-1275-7-370

USDA

*Evaluation of Pathogens and Pesticides Affecting Honey Bee Health*

Dates: 09/28/07 to 09/03/12

HDTRA1-11-1-0010

DTRA

*A Scalable Technology for Monitoring Health Status and Surveying Infections*

Subcontract to Columbia (Lipkin) from Arizona State University

Dates: 03/01/11 to 08/31/12

PI: Stephen Johnston

HHSO100201000048C

BARDA

*Confirmation of Harmful Agents by Mass Tag PCR – Rapid Screening Platform*

Subcontract to Columbia (Lipkin) from Northrop Grumman Corporation

Dates: 10/04/10 to 06/20/12

U01AI070411

NIH (NIAID)

*Viral Arrays for Biodefense*

Establish and validate a viral sequence database and its complementary oligonucleotide array technology for detection and differentiation of influenza viruses and hemorrhagic fever viruses.

Dates: 09/01/06 to 08/31/11

R24 EY017404

NIH (NEI)

*Development of Complement Modulating Therapeutics for AMD*

Subcontract to Columbia (Lipkin) from the University of Iowa

Dates: 08/01/06 to 07/31/11

PI: Gregory Hageman

HL083850-02

NIH (NHLBI)

*Pathogen Discovery in Chronic Lung Disease by Mass Tag PCR and Microarrays*

Dates: 12/1/05 to 04/30/10

W81XWH-07-1-0357

DOD

*Northeast Biodefense Center Capital Completion and Research Project*

Contract to Columbia (Lipkin) from DOD/USA Med Research ACQ Activity

Dates: 04/17/07 to 05/16/09



HHSN266200400036C

NIH (NIAID)

*ICTVdB: A Virus Database for Biodefense and Emerging Infectious Disease Research*

Subcontract to Columbia (Lipkin) from the Viral Bioinformatics Resource Center

Dates: 06/30/06 to 12/31/09

U54 AI57158-05

NIH (NIAID)

*Northeast Biodefense Center*

Response to NIAID RFA entitled "RCE for Biodefense and Emerging Infectious Disease Research"

Dates: 09/01/03 to 02/28/09

AI062705

NIH (NIAID)

*Mass Tag PCR Detection of Respiratory Pathogens*

Dates: 09/30/04 to 08/31/09

Agilent Technologies, Inc.

*Columbia-Agilent Evaluation Agreement for Pathogen Detection*

Dates: 02/15/08 to 08/14/08

AI51292

NIH (NIAID)

*A Staged Strategy for Virus Identification and Discovery*

Response to NIAID/NCI RFA entitled "Etiology of Chronic Diseases: Novel Approaches to Pathogen Detection"

Dates: 07/01/02 to 06/30/07

HD37546

NIH (NICHD)

*A Developmental Model for Autism Based on CNS Infection*

Dates: 05/01/00 to 04/30/05

Ellison Medical Foundation

*Pandora's Box Project*

Dates: 10/01/01 to 09/30/05

AI56118

NIH (NIAID)

*A Staged Strategy for Virus Identification and Discovery*

Competitive Supplement

Dates: 08/01/03 to 07/31/05

Dates: 04/01/04 to 06/30/06

CDC/American Academy of Pediatrics

*MV Sequences in Children with Autistic Disorders*

Dates: 09/30/02 to 09/29/04

AI55466

NIH (NIAID)

Subcontract to Columbia (Lipkin) from University of Colorado

*Viral Triggers of Type I Diabetes*

Dates: 10/01/02 to 09/30/04



PI: Marian Rewers

Earth Institute  
*Program in Microbial Surveillance and Discovery*  
Dates: 10/01/02 to 06/30/04

NS29425  
NIH (NINDS)  
*Molecular Analysis of a Neurotropic Agent, Borna Virus*  
Dates: 07/01/98 to 06/30/03

MH57467  
NIH (NIMH)  
*Borna Disease Virus and Neuropsychiatric Disease*  
Dates: 07/01/99 to 06/30/03

K08-MH01608  
NIH (NIMH)  
*Mechanisms of Neuropathogenesis in Borna Disease (K08 Mentored Clinical Scientist Development Award)*  
Dates: 07/01/98 to 06/30/03  
PI: Mady Hornig; W. Ian Lipkin, Mentor; J. McGaugh, L. Stein; Co-Mentors

K08-DA00376  
NIH (NIDA)  
*CNS Viral Injury and Vulnerability to Opiate Drug Abuse (K08 Mentored Clinical Scientist Development Award)*  
Dates: 04/01/98 to 03/31/03  
PI: Marylou Solbrig; W. Ian Lipkin, Mentor; G Koob, Co-Mentor

Wyeth-Ayerst  
Mady Hornig, P.I./W. Ian Lipkin, Co-P.I.  
*Unrestricted Educational Grant*

NIH (NIDA)  
Supplement to NIH (NIMH) MH57467  
*Microbial and Immune Factors in Treatment Resistance in Cocaine Addiction*  
Dates: 09/01/99 to 06/30/02

Department of Defense  
*Development and Testing of Fluorescent TaqMan PCR Probes and DNA and RNA Controls to Detect WNV, SLE and VEE Viral Pathogens*  
Dates: 02/01/01 to 06/30/01

National Multiple Sclerosis Society  
Pilot Project: *Differential Display Analysis of a Lewis Rat Model of Wallerian Degeneration*  
Dates: 12/01/99 to 11/30/00

ICN Pharmaceuticals  
*In Vitro and In Vivo Studies of Antiviral Compounds for BDV*  
Dates: 11/01/97 to 06/30/01

RO1-NS29425 Supplement



NIH (NINDS)  
*Enteroviruses and ALS*  
Dates: 05/01/00 to 10/31/00

RO1-NS29425 Supplement  
NIH (NINDS)  
*Molecular Analysis of West Nile Virus NY1999*  
Dates: 11/01/99 to 06/30/00

Anonymous Private Donor  
*Pathogenesis of Basal Ganglia Disorders*  
Dates: 07/01/99 to 06/30/00

BehringWerke AG, Marburg, Germany  
*New Associations of Infectious Agents with Human Diseases*  
Dates: 07/01/96 to 12/31/99

National Alliance for Autism Research  
*Bornavirus Infection and Autism Pathogenesis*  
Dates: 07/01/97 to 06/30/98

Pfizer Pharmaceuticals, Inc.  
*An Eight-Week, Multicenter, Parallel-Group, Double-Blind, Placebo-Controlled Study of Setraline in the Treatment of Elderly Outpatients with DSM-IV Major Depression*  
PI: Mady Hornig  
Dates: 08/04/97 to 04/15/99

Scottish Rite Schizophrenia Research Program  
*Borna Disease Virus and Schizophrenia*  
Dates: 08/01/97 to 07/31/99

Stanley Foundation  
*Collaborative Study of Borna Disease Virus in Affective Disorders and Schizophrenia*  
Dates: 08/01/96 to 07/31/98

Lucille P. Markey Charitable Trust  
*Program in Human Neurobiology*  
Dates: 02/15/95 to 02/14/99  
Non-renewable Trust: Program project comprised of 28 investigators in clinical and basic neuroscience focused on imaging and informatics. Provided startup funds for new faculty, pilot projects, purchase of 4.0 Tesla magnet facility for research and clinical imaging.

Wayne and Gladys Valley Foundation  
Grant No. 94-16  
Dates: 01/01/94 to 12/31/95

University-wide AIDS Research Program  
Dates: 01/01/92 to 12/31/93

National Multiple Sclerosis Society  
*Pilot Grant*  
Dates: 01/01/92 to 12/31/92





Pew Scholars Program in the Biomedical Sciences  
*Molecular Analysis of Borna Disease Virus, a Novel Neurotropic Agent*  
 Dates: 07/01/91 to 06/30/95

RO1-NS29425  
 NIH (NINDS)  
*Molecular Analysis of a Neurotropic Agent, Borna Virus*  
 Dates: 05/01/94 to 04/30/98

RO1-NS29425  
 NIH (NINDS)  
*Molecular Analysis of a Neurotropic Agent, Borna Virus*  
 Dates: 05/01/91 to 04/30/94

National Alliance for Research in Schizophrenia and Affective Disorders  
*Young Investigator Award*  
 Dates: 07/01/90 to 06/30/92

KO8 NS01026  
 NIH (NINDS)  
*Viruses, Neurotransmitters and Neurologic Diseases*  
 Dates: 04/01/87 to 03/31/92

FG671-A-1  
 National Multiple Sclerosis Society  
*Postdoctoral Fellowship Award*  
 Dates: 07/01/84 to 06/30/87

#### DEPARTMENTAL AND UNIVERSITY COMMITTEES

- UCI Molecular Biology Core Facility, Co-director, 1992-2002
- UCI College of Medicine Academic Resources Advisory Council, Chair, 1994-1996  
 (faculty appointments and promotions to tenure, allocation of faculty positions to departments)
- UCI Conflict of Interest Oversight Committee, 1995-2000
- UCI College of Medicine Committee on Committees, 1997-2002  
 (appointment of faculty to service and oversight committees)
- UCI College of Medicine Executive Committee, 1997-2002  
 (resource allocation)
- UCI College of Medicine Research Advisory Group, 1998-2002  
 (advisory to Dean on resource focus and allocations)
- Orange Coast College Biotechnology Curriculum Advisory Board, 1998-2000
- Policy Advisory Committee, 2009-present
- Columbia University Senate, Mailman School of Public Health, 2011-2019
  - Education Committee 2011-2019
  - Honors and Prizes Committee 2013-2019
- Dean's Advisory Group, Mailman School of Public Health, 2014-present

#### TEACHING EXPERIENCE

##### ***Courses Taught***

UCI College of Medicine  
*Neurology Ward and Consult Rounds*



1990-1999: two months per year, 6 hours per day, 6 days per week  
Average of 8 students; 3 residents per year

UCI College of Medicine  
Department of Anatomy & Neurobiology  
Graduate Level Introduction to Techniques in Neuroscience  
1991-1993  
8 contact hours per year

UCI Combined Graduate Program  
Molecular Biology 205: Topics in Viral Gene Expression  
1998-2001  
6 contact hours per year

UCI Combined Graduate Program  
Microbiology and Molecular Genetics 222: Molecular Pathogenesis of Viral Infections  
1998-2000  
Course Creator and Director  
8 contact hours in alternate years

Columbia University, Physicians & Surgeons  
Microbiology/Infectious Diseases  
2002-2004

Columbia University, Mailman School of Public Health  
Emerging Infectious Diseases  
2002-2005

### ***Past Graduate Students***

Kelly Thibault, Microbiology & Molecular Genetics  
B.S., Montana State University, 1988  
M.S., University of California Irvine, 1994  
Training period: 1991-1992  
Current position: Unknown

Carolyn Hatalski, Anatomy & Neurobiology  
B.A., University of California, San Diego, 1989  
Ph.D., University of California Irvine, 1996  
Training period: 1990-1996  
Current position: Unknown

Stefanie Kliche  
B.S., Freie Universität Berlin, Germany  
Ph.D., Freie Universität Berlin and University of California Irvine, 1996  
Training period: 1992-1996  
Current position: Research Scientist, Institut für Molekulare und Klinische, Universität Magdeburg

Patrick Schneider, Microbiology & Molecular Genetics  
B.S., Northern Arizona University, 1989  
Ph.D., University of California Irvine, 1996  
Training period: 1992-1996



Current position: Head of R&D & Business Division, MilliporeSigma

Ann Lewis, Anatomy & Neurobiology, M.D., Ph.D. Program  
B.S., California Institute of Technology, 1989  
M.D./Ph.D., University of California Irvine, 1998  
Training period: 1991-1998  
Current position: Practicing Clinician in Pediatric Neurology

Robert Schlaberg, School of Medicine, Universität Würzburg  
Training period: 1999-2000 (one year internship in neurovirology and neuroimmunology)  
Current position: Medical Director, Microbial Amplified Detection, Virology, and Fecal Chemistry Laboratories; Assistant Medical Director, Virology and Molecular Infectious Disease Laboratories, Arup Laboratories; Assistant Professor of Pathology, University of Utah School of Medicine

Michelle Portlance, Microbiology & Molecular Genetics  
B.S., University of Minnesota, 1994  
Ph.D., University of California Irvine, 2000  
Training period: 1994-2000  
Current position: Unknown

Jill Dever, Microbiology & Molecular Genetics  
B.S., University of California, Los Angeles, 1997  
M.S., University of California Irvine, 2000  
Training period: 1998-2000  
Current position: Unknown

Heather Cook, Mailman School of Public Health, Columbia University  
B.S., Cedar Crest College, 2002  
Training period: 2002-2003  
Current position: Unknown

Brent Williams, Microbiology & Molecular Genetics, UC Irvine  
B.S., University of Illinois, 1998  
Training period: 1998-2006  
Current position: Assistant Professor, Columbia University

Omar Jabado, Columbia University  
B.A., Cornell University, 2000  
Training period: 2003-2009  
Current position: Senior Research Investigator, Bristol-Myers Squibb

Kevin Chien-Chin Hsu  
M.D., Chung Shan Medical and Dental College of Taichung  
Training period: 2007-2012  
Current position: Director of Emergency Medicine, Chi-Mei Medical Center

Lina Fan  
B.S. University of St. Andrews, 2004  
Training period: 2005-2010  
Current position: Healthcare Equity Analyst, Miura Global Management

Ana Valeria Bussetti  
Ph.D., University of Buenos Aires, Argentina, 2005



Training Period: 2012-2016

Current position: Unknown

***Current Graduate Students***

Isamara Navarrete-Macias

B.S., Autonomous University of Baja California, 2004

Training period: 2017-Present

Stephen Sameroff

B.S., Boston University, 2007

Training period: 2017-Present

Alexandra Petrosov

B.S. Ben Gurion University, 2005

Training period: 2015-Present

Simon Williams

B.S., University of Western Australia, 2002

Training Period: 2014-Present

***Past Postdoctoral Fellows***

Thomas Brieze

Ph.D., Max-Planck-Institute for Molecular Genetics, 1987

Training period: 1991-1993

Current position: Associate Director, Center for Infection and Immunity and Associate Professor, Columbia University

Marylou Solbrig

M.D., Albert Einstein College of Medicine, 1980

Training period: 1991-1995

Current position: Professor, University of Manitoba

Anette Schneemann

Ph.D., University of Wisconsin, 1992

Training period: 1992-1994

Current position: Associate Professor, The Scripps Research Institute

Licheng Shi

M.D., China Medical University, 1986

Training period: 1995-1997

Current position: Research Scientist, Amgen

Chen Even

Ph.D., University of Minnesota, 1995

Training period: 1994-1996

Current position: Chief Commercial Officer, DiaSorin S.p.A.

Nilamani Jena

Ph.D., Thomas Jefferson University, 1997

Training period: 1997-1998

Current position: Associate Project Scientist, University of California, Irvine



Martin Schwemmle  
Ph.D., Universität Freiburg, 1992  
Training period: 1995-1998  
Current position: Professor, Universität Freiburg

Xiju (Larry) Jia  
M.D., Suzhou Medical College, 1982  
Training period: 1996-1999  
Current Position: Founder and Director, Zymo Research Corp.

Mirella Salvatore  
M.D., Catholic University Medical School of Rome, 1986  
Training period: 1996-1998  
Current position: Assistant Professor, Weill Cornell Medical College

Ingo Jordan  
Ph.D., Universität Würzburg, 1997  
Training period: 1997-2000  
Current position: Director Program Management RNAoptimizer, CureVac AG, Tübingen, Baden-Württemberg

Nigel Horscroft  
Ph.D., Oxford University  
Training period: 1997-2000  
Current position: Director of Alliance Management, CureVac AG

Nicole Fischer  
Ph.D., Universität Würzburg, 1997  
Training period: 1997-2000  
Current position: Scientist, University Medical Center Hamburg-Eppendorf

Dale Carpenter  
Ph.D., University of Saskatchewan, 1992  
Training period: 1998-2001  
Current position: Unknown

Kurt Hoffman  
Ph.D., University of Oregon, 1998  
Training period: 1999-2002  
Current position: Professor, Universidad Autonoma de Tlaxcala, Mexico

Gustavo Palacios  
Ph.D., University of Buenos Aires  
Training period: 2002-2004  
Current position: Director, Center for Genomic Sciences at the USAMRIID

Joanne MacDonald  
Ph.D., University of Queensland, 2002  
Training period: 2002-2004  
Current position: Associate Professor, University of the Sunshine Coast; Assistant Professor, Columbia University





Ashok Mundrigi  
Ph.D., Indian Institute of Science, Bangalore, India, 2001  
Training period: 2001-2004  
Current position: General Manager, R&D at Sartorius Stedim India Pvt. Ltd

Robert Schlaberg  
M.D., Universität Würzburg 2004  
Training period: 2004-2005  
Current position: Assistant Professor, University of Utah

Neil Renwick  
M.B.Ch.B., University of Otago, 1993  
Ph.D., University of Amsterdam, 2001  
Training period: 2003-2007  
Current position: Assistant Professor, Queen's University

Junhui Zhai  
Ph.D., Institute of Microbiology and Immunology of Beijing 2002  
Training period: 2005-2007  
Current position: Academy of Military Medicine, Beijing

Ulrike Siemetzki  
D.V.M., Freie Universität Berlin, 2000  
Ph.D., Freie Universität Berlin, 2002  
Training period: 2003-2007  
Current position: Research Scientist, Qiagen

Lan Quan  
Ph.D., University of Paris 2004  
Training period: 2005-2008  
Current position: Associate Research Scientist, Columbia University

Kavitha Yaddanapudi  
Ph.D., Indian Institute of Science, 2003  
Training Period: 2003-2010  
Current Position: Assistant Professor, University of Louisville

Joari Marques De Miranda  
Ph.D., Universidade Federal do Rio de Janeiro 2005  
Training period: 2005-2009  
Current Position: Unknown

Rafal Tokarz  
Ph.D., SUNY Stony Brook 2006  
Training period: 2006-2010  
Current Position: Associate Research Scientist, Columbia University

Brent Williams  
Ph.D., UC Irvine 2007  
Training period: 2006-2009  
Current Position: Assistant Professor, Columbia University

Kirsi Honkavuori  
Ph.D., University of St. Andrews 2007



Training period: 2007-2012  
Current Position: Unknown

Alexander Solovyov  
Ph.D., Princeton University 2003-2009  
Training period: 2009-2011  
Current Position: Post-Doctoral Research Scientist, Mount Sinai School of Medicine

Rashmi Chowdhary  
Ph.D., Chattrapati Sahuji Maharaj University 2009  
Training period: 2009-2012  
Current Position: Assistant Professor, All India Institute of Medical Sciences Bhopal

Cadhla Firth  
Ph.D., Pennsylvania State University 2006-2010  
Training Period: 2010-2012  
Current Position: Research Scientist, Commonwealth Scientific and Industrial Research Organisation

Simon Anthony  
D.PHIL., University of Oxford/Institute of Animal Health 2007  
Training period: 2010-2013  
Current Position: Assistant Professor, Columbia University

Tracie Seimon  
Ph.D., University of Colorado Health Sciences Center  
Training Period: 2010-2014  
Current Position: Molecular Scientist, Wildlife Conservation Society

Kerry Jo Lee  
MD, New York University School of Medicine  
Training period: 2012-2014  
Current Position: Medical Officer, Food and Drug Administration

Yanbing Zhou  
MD, Shanghai Medical University  
PhD, Fudan University  
Training Period: 2013-2014  
Professor, Directory of Gastrointestinal Surgery

Sandra Abel-Nielsen  
Ph.D., University of Copenhagen 2010-2013  
Training Period: 2014  
Current Position: Postdoctoral Scholar, Stanford University

Raja Duraisamy  
Ph.D., King Institute of Preventive Medicine  
Training period: 2011-2015  
Current Position: Research Scientist, Aix-Marseille University

Nischay Mishra  
Ph.D., National Institute of Virology University of Pune  
Training period: 2011-2015  
Current Position: Associate Research Scientist, Columbia University



Lorenzo Uccellini  
Ph.D., University of Milan – L. Sacco Hospital  
Training Period: 2012-2015  
Current Position: Research Associate, Columbia University

Arvind Kumar  
Ph.D., King George's Medical University  
Training Period: 2014-2016  
Current Position: Postdoctoral Research Scientist, Nationwide Children's Hospital

Mark Zeller  
Ph.D., University of Leuven  
Training Period: 2015-2016  
Current Position: Postdoctoral Research Scientist, Scripps Research Institute

Milada Mahic  
Ph.D., University of Oslo  
Training Period: 2014-2017  
Current Position: Postdoctoral Research Scientist, Harvard University

Jan Gogarten  
Ph.D., McGill University  
Training Period: 2017-2018  
Current Position: Postdoctoral Researcher, The Leendertz Lab at the Robert Koch Institut

Dorottya Nagy-Szakal  
M.D., Semmelweis University Faculty of Medicine  
Training Period: 2015-2018  
Current Position: Chief Medical Officer and Clinical Laboratory Director at Biotia

Keunje Yoo  
Ph.D., Yonsei University  
Training Period: 2018-Present

#### ***Current Postdoctoral Fellows***

Orchid Allicock  
Ph.D., University of the West Indies  
Training Period: 2017-Present

Milica Milivojevic  
Ph.D., Institut Cochin  
Training Period: 2018-Present

Matthew Cummings  
MD, Albany Medical College  
Training Period: 2019-Present

#### ***Sabbatical Professors***

Mady Hornig, M.D.  
University of Pennsylvania  
1997-1999



Birgitta Evengard, M.D., Ph.D.  
Huddinge Hospital, Karolinska Institute  
1998

Herbert Weissenböck, D.V.M.  
University of Veterinary Sciences, Vienna  
1998-1999, summer 2000

Amadou Sall, Ph.D.  
Institut Pasteur de Dakar  
2010-2011

Peter G. E. Kennedy, C.B.E., M.D., Ph.D.  
Institute of Infection, Immunity and Inflammation, Glasgow University, Scotland, UK  
2013

Tadmiri Venkatesh, Ph.D.  
City College of New York, New York, NY  
2014-2015

Siri Mjaaland, Ph.D.  
Norwegian Institute of Public Health  
2014-2015

Irit Davidson, Ph.D.  
Kimron Veterinary Institute  
2015

## OTHER PROFESSIONAL ACTIVITIES

### ***Editorial Service***

Biological Psychiatry  
Emerging Infectious Diseases  
Journal of General Virology  
Journal of Immunology  
Journal of Immunologic Methods  
Journal of Virology  
Journal of Medical Microbiology  
Journal of Neurological Sciences  
Journal of NeuroVirology (Editorial Board)  
Journal of Virology  
Lancet  
Molecular Psychiatry (Editorial Board)  
Neurology Network Commentary  
Science  
Viral Immunology (Editorial Board)  
Virology (Editorial Board)  
Virus Research (Editorial Board)  
mBio (Editorial Board)  
Open Biology (Editorial Board)



## **Grant Reviews**

National Multiple Sclerosis Society Advisory Committee on Fellowships, 1991-1994

Cure Autism Now Scientific Advisory Board, 1997-2000; Chair, 1998-2000

National Institutes of Health NST, 2001-2004

Doris Duke Foundation, 2005-present

Ad Hoc Reviewer: Burrough Wellcome Foundation, Medical Research Council of Canada, National Institutes of Health (NINDS, NIAID, NIMH), Veterans Administration, Wellcome Trust  
Sloan Foundation, 2015

## **Conference Organization**

- Pew Planning Committee, 1993
- International Advisory Board, 1<sup>st</sup> International Conference on Emerging Zoonoses, Jerusalem, November 24-28, 1996
- Organizer, Keystone Symposium, Central Nervous System Infections: Host Pathogen Interactions, March 1999
- Co-organizer, Third International Symposium of Neurovirology, 2000
- Vice Chair, FASEB Conference, Microbial Pathogenesis: Mechanisms of Infectious Diseases, 2000
- Organizer, NIH Blue Ribbon Panel on Neurovirology, San Francisco, CA, September 2000
- Organizer, Microbiology, Immunology and Toxicology of Autism and Other Neurodevelopmental Disorders, Banbury Center of Cold Spring Harbor, Lloyd Harbor, NY, February 2000
- Organizer, Infectious Etiologies of Neuropsychiatric Diseases, World Congress of Biological Psychiatry, Berlin, Germany, July 2001
- International Meeting for Autism Research (Society for Neuroscience), San Diego, CA, November 2001, November 2002, May 2004
- International Congress on Emerging Infectious Diseases (Chair, Pathogen Discovery Symposium), Atlanta, GA, March 2002
- Chair, FASEB Conference, Microbial Pathogenesis: Mechanisms of Infectious Diseases, Snowmass, CO, 2002
- Chair, Emerging Infectious Diseases Discussion Group, New York Academy of Sciences, 2003-present
- Co-Chair, Regional Centers of Excellence in Biodefense and Emerging Infectious Diseases Diagnostics Workshop, New York, NY, January 2006
- Chair, Diagnostics and Pathogen Detection, Fourth American Society for Microbiology Biodefense Meeting, Washington, DC, February 2006
- Co-Chair, Regional Centers of Excellence in Biodefense and Emerging Infectious Diseases Annual Meeting, New York, NY, March 2006
- Chair, WHO Emerging and Dangerous Pathogens Laboratory Network, Geneva, 2009
- General Meeting Planning Committee, American Society for Microbiology, New Orleans, LA, 2011
- Co-Chair, National Biosurveillance Advisory Subcommittee, 2010-2012
- Organizer, NIH/NIAID Panel on The Emergence of New Epidemic Viruses, Rockville, MD, 2015

## **Policy Panels**

- Co-Chair, Bornavirus Study Group, International Committee on Taxonomy of Viruses, 1994-95
- American Society for Microbiology, Committee on International Policies, 1998-2001
- NCI/NIAID Blue Ribbon Panel on Infectious Etiologies of Chronic Disease, Bethesda, MD, June 1999





- NICHD/NIH Autism Regression/Immunization Panel, November 2000
- Organizer, NIH Blue Ribbon Panel on Neurovirology, September 2000
- NCI Blue Ribbon Panel on Microbial Infection and Human Cancer, March 2002
- NIH Blue Ribbon Panel on Neurovirology, San Francisco, CA, September 2000
- NIH Blue Ribbon Panel, Advanced Product Development for Multiplex Infectious Disease Diagnostics, Bethesda, MD, June 2005
- IH Blue Ribbon Panel for the Risk Assessment of the National Emerging Infectious Disease Laboratory at Boston University Medical Center, 2008-2010
- National Biosurveillance Advisory Subcommittee to the CDC Director, 2008-2011
- NIAID Blue Ribbon Panel on Genomics Research, 2010-
- NIH Advisory Committee to the Director, 2013-
- National Academies of Sciences, Engineering, and Medicine Committee on Dual Use Research of Concern, 2016
- NIH Working Group on Next Gen Researchers Initiative, 2017-

### ***Consultantships***

- Pathogenesis Corp., Seattle, WA, 1995 (molecular biology, infectious diseases)
- Sigris Research Inc., Brea, CA, 1996-1997 (molecular biology)
- Bio-Centric Operations, Joint Warfighting Center, Fort Monroe, VA, 1999 (bioterrorism)
- Centers for Disease Control and Prevention, Unexplained Deaths Project, 1997-2000 (pathogen discovery)
- Eli Lilly and Company, 2000 (infectious diseases in primary care)
- Keres Corporation, Los Angeles, CA, 2010
- IDAC Silliker, Kingdom of Saudi Arabia, 2015
- *Contagion* Warner Brothers movie, Scientific Advisor
- Plague Inc. mobile app, Scientific Advisor
- AMC *Contagion* T.V. Pilot, Scientific Advisor

### ***Scientific Advisory Boards***

- 454 Life Sciences Corporation, 2003-Present
- Defense Science Board Task Force on SARS Quarantine Guidance, 2003-2004
- Guangzhou Institute of Biomedicine and Health, 2003-2005
- International Experts Committee, Australian Biosecurity Cooperative Research Centre for Emerging Infectious Disease, 2003-2008
- Institut Pasteur de Shanghai, 2004-2009
- Southeast Research Center of Excellence for Emerging Infectious Diseases and Biodefense, 2006-2014
- Tetragenetics, 2007-
- National Emerging Infectious Disease Laboratory, 2007-2010
- Prosetta Corporation, 2008-
- Akonni Corporation, 2008-
- National Biosurveillance Advisory Subcommittee (NBAS), Chair, Task Force on Genomic Epidemiology and Digital Technologies, 2008-2011
- National Institute of Allergy and Infectious Diseases Board of Scientific Counselors (ad hoc), 2010
- Pathogenica, 2010 –
- Advisory Committee to the Director, Centers for Disease Control, 2010
- National Institute of Allergy and Infectious Diseases Population Genetics Program, 2011
- Scientific Steering Committee, Beijing Normal University, Joint Center for Global Change and Earth System Science, 2013-



- Scientific Advisory Board, Vietnam Initiative on Zoonotic Infections project, 2014-
- Network Executive Committee for the NIAID Centers of Excellence for Influenza Research and Surveillance (CEIRS) program, 2015-
- Puerto Rico Trust for Science and Technology, 2016
- External Advisory Board, Johns Hopkins Center of Excellence for Influenza Research and Surveillance, 2016

## PUBLICATIONS (H-Index Score: 91)

### **Papers**

1. **Lipkin WI.** Eosinophil counts in bacteremia. Archives of internal medicine. 1979 Apr;139(4):490-1.
2. Panitch HS, Francis GS, Hooper CJ, Messing RO, **Lipkin WI.** Immunological studies in patients with acquired immune deficiency syndrome. Annals of the New York Academy of Sciences. 1984;437:513-7.
3. **Lipkin WI,** Parry G, Kiprov D, Abrams D. Inflammatory neuropathy in homosexual men with lymphadenopathy. Neurology. 1985 Oct;35(10):1479-83.
4. **Lipkin WI,** Oldstone MB. Analysis of endogenous and exogenous antigens in the nervous system using whole animal sections. Journal of neuroimmunology. 1986 May;11(3):251-7.
5. Blount P, Elder J, **Lipkin WI,** Southern PJ, Buchmeier MJ, Oldstone MB. Dissecting the molecular anatomy of the nervous system: analysis of RNA and protein expression in whole body sections of laboratory animals. Brain research. 1986 Sep 24;382(2):257-65.
6. **Lipkin WI,** Parry G, Abrams D, Kiprov D. Polyradiculoneuropathy, polyradiculitis, and CMV in AIDS and ARC. Neurology. 1987 May;37(5):888.
7. **Lipkin WI,** Schwimbeck PL, Oldstone MB. Antibody to synthetic somatostatin-28(1-12): immunoreactivity with somatostatin in brain is dependent on orientation of immunizing peptide. The journal of histochemistry and cytochemistry: official journal of the Histochemistry Society. 1988 Apr;36(4):447-51.
8. Herzog NK, Singh B, Elder J, **Lipkin WI,** Trauger RJ, Millette CF, Goldman DS, Wolfes H, Cooper GM, Arlinghaus RB. Identification of the protein product of the c-mos proto-oncogene in mouse testes. Oncogene. 1988 Aug;3(2):225-9.
9. **Lipkin WI,** Carbone KM, Wilson MC, Duchala CS, Narayan O, Oldstone MB. Neurotransmitter abnormalities in Borna disease. Brain research. 1988 Dec 20;475(2):366-70.
10. **Lipkin WI,** Tyler KL, Waksman BH. Viruses, the immune system and central nervous system diseases. Trends in neurosciences. 1988 Feb;11(2):43-5.
11. **Lipkin WI,** Battenberg EL, Bloom FE, Oldstone MB. Viral infection of neurons can depress neurotransmitter mRNA levels without histologic injury. Brain research. 1988 Jun 7;451(1-2):333-9.
12. **Lipkin WI,** Villarreal LP, Oldstone MB. Whole animal section in situ hybridization and protein blotting: new tools in molecular analysis of animal models for human disease. Current topics in microbiology and immunology. 1989;143:33-54.
13. **Lipkin WI,** Wilson MC, Oldstone MB. Molecular insights into infections of the central nervous system. Research publications - Association for Research in Nervous and Mental Disease. 1990;68:15-22.
14. de la Torre JC, Carbone KM, **Lipkin WI.** Molecular characterization of the Borna disease agent. Virology. 1990 Dec;179(2):853-6.
15. **Lipkin WI,** Travis GH, Carbone KM, Wilson MC. Isolation and characterization of Borna disease agent cDNA clones. Proceedings of the National Academy of Sciences of the United States of America. 1990 Jun;87(11):4184-8.
16. Carbone KM, Moench TR, **Lipkin WI.** Borna disease virus replicates in astrocytes, Schwann



- cells and ependymal cells in persistently infected rats: location of viral genomic and messenger RNAs by in situ hybridization. *Journal of neuropathology and experimental neurology*. 1991 May;50(3):205-14.
17. Briele T, de la Torre JC, Lewis A, Ludwig H, **Lipkin WI**. Borna disease virus, a negative-strand RNA virus, transcribes in the nucleus of infected cells. *Proceedings of the National Academy of Sciences of the United States of America*. 1992 Dec 1;89(23):11486-9.
  18. McClure MA, Thibault KJ, Hatalski CG, **Lipkin WI**. Sequence similarity between Borna disease virus p40 and a duplicated domain within the paramyxovirus and rhabdovirus polymerase proteins. *Journal of virology*. 1992 Nov;66(11):6572-7.
  19. **Lipkin WI**, Briele T, de la Torre JC. Borna disease virus: molecular analysis of a neurotropic infectious agent. *Microbial pathogenesis*. 1992 Sep;13(3):167-70.
  20. McClure MA, Thibault KJ, Hatalski CG, **Lipkin WI**. Sequence similarity between Borna disease virus p40 and a duplicated domain within the paramyxovirus and rhabdovirus polymerase proteins. *Journal of virology*. 1993 Mar;67(3):1746.
  21. Schneider PA, Schneemann A, **Lipkin WI**. RNA splicing in Borna disease virus, a nonsegmented, negative-strand RNA virus. *Journal of virology*. 1994 Aug;68(8):5007-12.
  22. Solbrig MV, Koob GF, Fallon JH, **Lipkin WI**. Tardive dyskinesia in rats infected with Borna disease virus. *Neurobiology of disease*. 1994 Dec;1(3):111-9.
  23. Schneider PA, Briele T, Zimmermann W, Ludwig H, **Lipkin WI**. Sequence conservation in field and experimental isolates of Borna disease virus. *Journal of virology*. 1994 Jan;68(1):63-8.
  24. Briele T, Schneemann A, Lewis AJ, Park YS, Kim S, Ludwig H, **Lipkin WI**. Genomic organization of Borna disease virus. *Proceedings of the National Academy of Sciences of the United States of America*. 1994 May 10;91(10):4362-6.
  25. Kliche S, Briele T, Henschen AH, Stitz L, **Lipkin WI**. Characterization of a Borna disease virus glycoprotein, gp18. *Journal of virology*. 1994 Nov;68(11):6918-23.
  26. Schneemann A, Schneider PA, Kim S, **Lipkin WI**. Identification of signal sequences that control transcription of borna disease virus, a nonsegmented, negative-strand RNA virus. *Journal of virology*. 1994 Oct;68(10):6514-22.
  27. Weisman Y, Hummer D, Malkinson M, Meir R, Kliche S, **Lipkin WI**, Pitlik S. Borna disease virus antibodies among workers exposed to infected ostriches. *Lancet*. 1994 Oct 29;344(8931):1232-3.
  28. Briele T, **Lipkin WI**, de la Torre JC. Molecular biology of Borna disease virus. *Current topics in microbiology and immunology*. 1995;190:1-16.
  29. Solbrig MV, Fallon JH, **Lipkin WI**. Behavioral disturbances and pharmacology of Borna disease. *Current topics in microbiology and immunology*. 1995;190:93-101.
  30. Schneemann A, Schneider PA, **Lipkin WI**. The atypical strategies used for gene expression of Borna disease virus, a nonsegmented, negative-strand RNA virus. *Virus*. 1995 Dec;45(2):165-74.
  31. Briele T, Hatalski CG, Kliche S, Park YS, **Lipkin WI**. Enzyme-linked immunosorbent assay for detecting antibodies to Borna disease virus-specific proteins. *Journal of clinical microbiology*. 1995 Feb;33(2):348-51.
  32. Hatalski CG, Kliche S, Stitz L, **Lipkin WI**. Neutralizing antibodies in Borna disease virus-infected rats. *Journal of virology*. 1995 Feb;69(2):741-7.
  33. **Lipkin WI**, Schneemann A, Solbrig MV. Borna disease virus: implications for human neuropsychiatric illness. *Trends in microbiology*. 1995 Feb;3(2):64-9.
  34. Bilzer T, Planz O, **Lipkin WI**, Stitz L. Presence of CD4<sup>+</sup> and CD8<sup>+</sup> T cells and expression of MHC class I and MHC class II antigen in horses with Borna disease virus-induced encephalitis. *Brain pathology*. 1995 Jul;5(3):223-30.
  35. Schneemann A, Schneider PA, Lamb RA, **Lipkin WI**. The remarkable coding strategy of borna disease virus: a new member of the nonsegmented negative strand RNA viruses. *Virology*. 1995 Jun 20;210(1):1-8.



36. Solbrig MV, Koob GF, **Lipkin WI**. Naloxone-induced seizures in rats infected with Borna disease virus. *Neurology*. 1996 Apr;46(4):1170-1.
37. Solbrig MV, Koob GF, Joyce JN, **Lipkin WI**. A neural substrate of hyperactivity in borna disease: changes in brain dopamine receptors. *Virology*. 1996 Aug 15;222(2):332-8.
38. Kliche S, Stitz L, Mangalam H, Shi L, Binz T, Niemann H, Brieze T, **Lipkin WI**. Characterization of the Borna disease virus phosphoprotein, p23. *Journal of virology*. 1996 Nov;70(11):8133-7.
39. Solbrig MV, Koob GF, Fallon JH, Reid S, **Lipkin WI**. Prefrontal cortex dysfunction in Borna disease virus (BDV)--infected rats. *Biological psychiatry*. 1996 Oct 1;40(7):629-36.
40. **Lipkin WI**. Borna disease virus and mental illness. *Journal of the California Alliance for the Mentally Ill*. 1997(7):50-2.
41. Hatalski CG, Lewis AJ, **Lipkin WI**. Borna disease. *Emerging infectious diseases*. 1997 Apr-Jun;3(2):129-35.
42. Schwemmle M, De B, Shi L, Banerjee A, **Lipkin WI**. Borna disease virus P-protein is phosphorylated by protein kinase Cepsilon and casein kinase II. *The Journal of biological chemistry*. 1997 Aug 29;272(35):21818-23.
43. Evengard B, **Lipkin WI**. [A known virus in animals is suspected in humans. Borna disease virus has been detected in human neuropathy]. *Lakartidningen*. 1997 Dec 10;94(50):4753-6.
44. **Lipkin WI**. European consensus on viral encephalitis. *Lancet*. 1997 Feb 1;349(9048):299-300.
45. Schneider PA, Hatalski CG, Lewis AJ, **Lipkin WI**. Biochemical and functional analysis of the Borna disease virus G protein. *Journal of virology*. 1997 Jan;71(1):331-6.
46. Schneider PA, Kim R, **Lipkin WI**. Evidence for translation of the Borna disease virus G protein by leaky ribosomal scanning and ribosomal reinitiation. *Journal of virology*. 1997 Jul;71(7):5614-9.
47. Salvatore M, Morzunov S, Schwemmle M, **Lipkin WI**. Borna disease virus in brains of North American and European people with schizophrenia and bipolar disorder. *Bornavirus Study Group*. *Lancet*. 1997 Jun 21;349(9068):1813-4.
48. **Lipkin WI**, Hatalski CG, Brieze T. Neurobiology of Borna disease virus. *Journal of neurovirology*. 1997 May;3 Suppl 1:S17-20.
49. Schneider PA, Schwemmle M, **Lipkin WI**. Implication of a cis-acting element in the cytoplasmic accumulation of unspliced Borna disease virus RNAs. *Journal of virology*. 1997 Nov;71(11):8940-5.
50. **Lipkin WI**. The search for infectious agents in neuropsychiatric disorders: lessons from multiple sclerosis. *Molecular psychiatry*. 1997 Oct-Nov;2(6):437-8.
51. Solbrig MV, Koob GF, **Lipkin WI**. Cocaine sensitivity in Borna disease virus-infected rats. *Pharmacology, biochemistry, and behavior*. 1998 Apr;59(4):1047-52.
52. Schwemmle M, Salvatore M, Shi L, Richt J, Lee CH, **Lipkin WI**. Interactions of the borna disease virus P, N, and X proteins and their functional implications. *The Journal of biological chemistry*. 1998 Apr 10;273(15):9007-12.
53. **Lipkin WI**, Hornig M. Neurovirology. *Microbes and the brain*. *Lancet*. 1998 Dec 19-26;352 Suppl 4:SIV21.
54. Stitz L, Noske K, Planz O, Furrer E, **Lipkin WI**, Bilzer T. A functional role for neutralizing antibodies in Borna disease: influence on virus tropism outside the central nervous system. *Journal of virology*. 1998 Nov;72(11):8884-92.
55. Hatalski CG, Hickey WF, **Lipkin WI**. Evolution of the immune response in the central nervous system following infection with Borna disease virus. *Journal of neuroimmunology*. 1998 Oct 1;90(2):137-42.
56. Hatalski CG, Hickey WF, **Lipkin WI**. Humoral immunity in the central nervous system of Lewis rats infected with Borna disease virus. *Journal of neuroimmunology*. 1998 Oct 1;90(2):128-36.
57. Brieze T, Hornig M, **Lipkin WI**. Bornavirus immunopathogenesis in rodents: models for human neurological diseases. *Journal of neurovirology*. 1999 Dec;5(6):604-12.
58. Jia XY, Brieze T, Jordan I, Rambaut A, Chi HC, Mackenzie JS, Hall RA, Scherret J, **Lipkin WI**.



- Genetic analysis of West Nile New York 1999 encephalitis virus. *Lancet*. 1999 Dec 4;354(9194):1971-2.
59. Schwemmle M, Jehle C, Shoemaker T, **Lipkin WI**. Characterization of the major nuclear localization signal of the Borna disease virus phosphoprotein. *The Journal of general virology*. 1999 Jan;80 (1):97-100.
  60. Solbrig M, Koob G, **Lipkin WI**. Orofacial dyskinesias and dystonia in rats infected with Borna disease virus; a model for tardive dyskinesic syndromes. *Molecular psychiatry*. 1999 Jul;4(4):310-2.
  61. Lewis AJ, Whitton JL, Hatalski CG, Weissenbock H, **Lipkin WI**. Effect of immune priming on Borna disease. *Journal of virology*. 1999 Mar;73(3):2541-6.
  62. Evengard B, Briesse T, Lindh G, Lee S, **Lipkin WI**. Absence of evidence of Borna disease virus infection in Swedish patients with Chronic Fatigue Syndrome. *Journal of neurovirology*. 1999 Oct;5(5):495-9.
  63. Briesse T, Jia XY, Huang C, Grady LJ, **Lipkin WI**. Identification of a Kunjin/West Nile-like flavivirus in brains of patients with New York encephalitis. *Lancet*. 1999 Oct 9;354(9186):1261-2.
  64. Hornig M, Weissenbock H, Horscroft N, **Lipkin WI**. An infection-based model of neurodevelopmental damage. *Proceedings of the National Academy of Sciences of the United States of America*. 1999 Oct 12;96(21):12102-7.
  65. Jordan I, Briesse T, Averett DR, **Lipkin WI**. Inhibition of Borna disease virus replication by ribavirin. *Journal of virology*. 1999 Sep;73(9):7903-6.
  66. Jordan I, Briesse T, **Lipkin WI**. Discovery and molecular characterization of West Nile virus NY 1999. *Viral immunology*. 2000;13(4):435-46.
  67. **Lipkin WI**. Emerging infectious diseases: emerging agents and emerging concepts. *International Antiviral News*. 2000 (8):95.
  68. Weissenbock H, Hornig M, Hickey WF, **Lipkin WI**. Microglial activation and neuronal apoptosis in Bornavirus infected neonatal Lewis rats. *Brain pathology*. 2000 Apr;10(2):260-72.
  69. Jehle C, **Lipkin WI**, Staeheli P, Marion RM, Schwemmle M. Authentic Borna disease virus transcripts are spliced less efficiently than cDNA-derived viral RNAs. *The Journal of general virology*. 2000 Aug;81(8):1947-54.
  70. Walker MP, Jordan I, Briesse T, Fischer N, **Lipkin WI**. Expression and characterization of the Borna disease virus polymerase. *Journal of virology*. 2000 May;74(9):4425-8.
  71. Briesse T, Glass WG, **Lipkin WI**. Detection of West Nile virus sequences in cerebrospinal fluid. *Lancet*. 2000 May 6;355(9215):1614-5.
  72. Solbrig MV, Koob GF, Parsons LH, Kadota T, Horscroft N, Briesse T, **Lipkin WI**. Neurotrophic factor expression after CNS viral injury produces enhanced sensitivity to psychostimulants: potential mechanism for addiction vulnerability. *The Journal of neuroscience : the official journal of the Society for Neuroscience*. 2000 Nov 1;20(21):RC104.
  73. Jordan I, Briesse T, Fischer N, Lau JY, **Lipkin WI**. Ribavirin inhibits West Nile virus replication and cytopathic effect in neural cells. *The Journal of infectious diseases*. 2000 Oct;182(4):1214-7.
  74. Hornig M, Briesse T, **Lipkin WI**. Bornavirus tropism and targeted pathogenesis: virus-host interactions in a neurodevelopmental model. *Advances in virus research*. 2001;56:557-82.
  75. Hornig M, **Lipkin WI**. Infectious and immune factors in the pathogenesis of neurodevelopmental disorders: epidemiology, hypotheses, and animal models. *Mental retardation and developmental disabilities research reviews*. 2001;7(3):200-10.
  76. Hornig M, Solbrig M, Horscroft N, Weissenbock H, **Lipkin WI**. Borna disease virus infection of adult and neonatal rats: models for neuropsychiatric disease. *Current topics in microbiology and immunology*. 2001;253:157-77.
  77. Walker MP, Schlager R, Hays AP, Bowser R, **Lipkin WI**. Absence of echovirus sequences in brain and spinal cord of amyotrophic lateral sclerosis patients. *Annals of neurology*. 2001 Feb;49(2):249-53.
  78. Jordan I, **Lipkin WI**. Borna disease virus. *Reviews in medical virology*. 2001 Jan-Feb;11(1):37-





- 57.
79. **Lipkin WI**, Hornig M, Brieese T. Borna disease virus and neuropsychiatric disease--a reappraisal. *Trends in microbiology*. 2001 Jul;9(7):295-8.
80. Scherret JH, Poidinger M, Mackenzie JS, Broom AK, Deubel V, **Lipkin WI**, Brieese T, Gould EA, Hall RA. The relationships between West Nile and Kunjin viruses. *Emerging infectious diseases*. 2001 Jul-Aug;7(4):697-705.
81. Hornig M, Mervis R, Hoffman K, **Lipkin WI**. Infectious and immune factors in neurodevelopmental damage. *Molecular psychiatry*. 2002;7 Suppl 2:S34-5.
82. **Lipkin WI**, Cold Spring Harbor Laboratory. Banbury C. Microbiology, immunology and toxicology of autism and other neurodevelopmental disorders. 2002: Nature Publishing Group; 2002.
83. Walker MP, **Lipkin WI**. Characterization of the nuclear localization signal of the borna disease virus polymerase. *Journal of virology*. 2002 Aug;76(16):8460-7.
84. Solbrig MV, Schlager R, Brieese T, Horscroft N, **Lipkin WI**. Neuroprotection and reduced proliferation of microglia in ribavirin-treated bornavirus-infected rats. *Antimicrobial agents and chemotherapy*. 2002 Jul;46(7):2287-91.
85. Brieese T, Rambaut A, Pathmajeyan M, Bishara J, Weinberger M, Pitlik S, **Lipkin WI**. Phylogenetic analysis of a human isolate from the 2000 Israel West Nile virus epidemic. *Emerging infectious diseases*. 2002 May;8(5):528-31.
86. Solbrig MV, Koob GF, **Lipkin WI**. Key role for enkephalinergic tone in cortico-striatal-thalamic function. *The European journal of neuroscience*. 2002 Nov;16(9):1819-22.
87. **Lipkin WI**, Hornig M. Microbiology and immunology of autism spectrum disorders. *Novartis Foundation symposium*. 2003;251:129-43; discussion 44-8, 281-97.
88. Hornig M, Brieese T, **Lipkin WI**. Borna disease virus. *Journal of neurovirology*. 2003 Apr;9(2):259-73.
89. Omalu BI, Shakir AA, Wang G, **Lipkin WI**, Wiley CA. Fatal fulminant pan-meningo-polioencephalitis due to West Nile virus. *Brain pathology*. 2003 Oct;13(4):465-72.
90. Schwemmle M, **Lipkin WI**. Models and mechanisms of Bornavirus pathogenesis. *Drug Discovery Today: Disease Mechanisms*. 2004 11//;1(2):211-6.
91. **Lipkin WI**, Hornig M. Psychotropic viruses. *Current opinion in microbiology*. 2004 Aug;7(4):420-5.
92. Qiao M, Ashok M, Bernard KA, Palacios G, Zhou ZH, **Lipkin WI**, Liang TJ. Induction of sterilizing immunity against West Nile Virus (WNV), by immunization with WNV-like particles produced in insect cells. *The Journal of infectious diseases*. 2004 Dec 15;190(12):2104-8. **\*Corresponding Author**
93. Domingo C, Palacios G, Niedrig M, Cabrerizo M, Jabado O, Reyes N, **Lipkin WI**, Tenorio A. A new tool for the diagnosis and molecular surveillance of dengue infections in clinical samples. *Dengue Bulletin*. 2004 Dec-2004;2004 Dec( 28):87-95.
94. Zhai J, Brieese T, Dai E, Wang X, pang X, Du Z, Liu H, Wang J, Wang H, Guo Z, Chen Z, Jiang L, Zhou D, Han Y, Jabado O, Palacios G, **Lipkin WI**, Tang R. Real-time polymerase chain reaction for detecting SARS coronavirus, Beijing, 2003. *Emerging infectious diseases*. 2004 Feb;10(2):300-3.
95. Hoffman KL, Hornig M, Yaddanapudi K, Jabado O, **Lipkin WI**. A murine model for neuropsychiatric disorders associated with group A beta-hemolytic streptococcal infection. *The Journal of neuroscience : the official journal of the Society for Neuroscience*. 2004 Feb 18;24(7):1780-91.
96. Brieese T, Rambaut A, **Lipkin WI**. Analysis of the medium (M) segment sequence of Guaro virus and its comparison to other orthobunyaviruses. *The Journal of general virology*. 2004 Oct;85(10):3071-7.
97. Hornig M, Chian D, **Lipkin WI**. Neurotoxic effects of postnatal thimerosal are mouse strain dependent. *Molecular psychiatry*. 2004 Sep;9(9):833-45.
98. Jacobson S, **Lipkin WI**. Reviews in NeuroVirology: An introduction. *Journal of neurovirology*.



- 2005 2005/09/01;11(5):411-.
99. Palacios G, Jabado O, Cisterna D, de Ory F, Renwick N, Echevarria JE, Castellanos A, Mosquera M, Freire MC, Campos RH, **Lipkin WI**. Molecular identification of mumps virus genotypes from clinical samples: standardized method of analysis. *Journal of clinical microbiology*. 2005 Apr;43(4):1869-78.
  100. Casas I, Avellon A, Mosquera M, Jabado O, Echevarria JE, Campos RH, Rewers M, Perez-Brena P, **Lipkin WI**, Palacios G. Molecular identification of adenoviruses in clinical samples by analyzing a partial hexon genomic region. *Journal of clinical microbiology*. 2005 Dec;43(12):6176-82.
  101. Brieze T, Palacios G, Kokoris M, Jabado O, Liu Z, Renwick N, Kapoor V, Casas I, Pozo F, Limberger R, Perez-Brena P, Ju J, **Lipkin WI**. Diagnostic system for rapid and sensitive differential detection of pathogens. *Emerging infectious diseases*. 2005 Feb;11(2):310-3.
  102. Munoz-Jordan JL, Laurent-Rolle M, Ashour J, Martinez-Sobrido L, Ashok M, **Lipkin WI**, Garcia-Sastre A. Inhibition of alpha/beta interferon signaling by the NS4B protein of flaviviruses. *Journal of virology*. 2005 Jul;79(13):8004-13.
  103. Palacios G, Jabado O, Renwick N, Brieze T, **Lipkin WI**. Severe acute respiratory syndrome coronavirus persistence in Vero cells. *Chinese medical journal*. 2005 Mar 20;118(6):451-9.
  104. Macdonald J, Tonry J, Hall RA, Williams B, Palacios G, Ashok MS, Jabado O, Clark D, Tesh RB, Brieze T, **Lipkin WI**. NS1 protein secretion during the acute phase of West Nile virus infection. *Journal of virology*. 2005 Nov;79(22):13924-33.
  105. Hirsch AJ, Medigeshi GR, Meyers HL, DeFilippis V, Fruh K, Brieze T, **Lipkin WI**, Nelson JA. The Src family kinase c-Yes is required for maturation of West Nile virus particles. *Journal of virology*. 2005 Sep;79(18):11943-51.
  106. Jabado OJ, Palacios G, Kapoor V, Hui J, Renwick N, Zhai J, Brieze T, **Lipkin WI**. Greene SCPrimer: a rapid comprehensive tool for designing degenerate primers from multiple sequence alignments. *Nucleic acids research*. 2006;34(22):6605-11.
  107. Domingo C, Palacios G, Jabado O, Reyes N, Niedrig M, Gascon J, Cabrerizo M, **Lipkin WI**, Tenorio A. Use of a short fragment of the C-terminal E gene for detection and characterization of two new lineages of dengue virus 1 in India. *Journal of clinical microbiology*. 2006 Apr;44(4):1519-29.
  108. Palacios G, Brieze T, Kapoor V, Jabado O, Liu Z, Venter M, Zhai J, Renwick N, Grolla A, Geisbert TW, Drosten C, Towner J, Ju J, Paweska J, Nichol ST, Swanepoel R, Feldmann H, Jahrling PB, **Lipkin WI**. MassTag polymerase chain reaction for differential diagnosis of viral hemorrhagic fever. *Emerging infectious diseases*. 2006 Apr;12(4):692-5.
  109. Yaddanapudi K, Palacios G, Towner JS, Chen I, Sariol CA, Nichol ST, **Lipkin WI**. Implication of a retrovirus-like glycoprotein peptide in the immunopathogenesis of Ebola and Marburg viruses. *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*. 2006 Dec;20(14):2519-30.
  110. Williams BL, Yaddanapudi K, Kirk CM, Soman A, Hornig M, **Lipkin WI**. Metallothioneins and zinc dysregulation contribute to neurodevelopmental damage in a model of perinatal viral infection. *Brain pathology*. 2006 Jan;16(1):1-14.
  111. Brieze T, Bird B, Kapoor V, Nichol ST, **Lipkin WI**. Batai and Ngari viruses: M segment reassortment and association with severe febrile disease outbreaks in East Africa. *Journal of virology*. 2006 Jun;80(11):5627-30.
  112. Witso E, Palacios G, Cinek O, Stene LC, Grinde B, Janowitz D, **Lipkin WI**, Ronningen KS. High prevalence of human enterovirus a infections in natural circulation of human enteroviruses. *Journal of clinical microbiology*. 2006 Nov;44(11):4095-100.
  113. Lamson D, Renwick N, Kapoor V, Liu Z, Palacios G, Ju J, Dean A, St George K, Brieze T, **Lipkin WI**. MassTag polymerase-chain-reaction detection of respiratory pathogens, including a new rhinovirus genotype, that caused influenza-like illness in New York State during 2004-2005. *The Journal of infectious diseases*. 2006 Nov 15;194(10):1398-402.



114. Avellon A, Rubio G, Palacios G, Casas I, Rabella N, Reina G, Perez C, **Lipkin WI**, Trallero G. Enterovirus 75 and aseptic meningitis, Spain, 2005. *Emerging infectious diseases*. 2006 Oct;12(10):1609-11.
115. Williams BL, **Lipkin WI**. Endoplasmic reticulum stress and neurodegeneration in rats neonatally infected with borna disease virus. *Journal of virology*. 2006 Sep;80(17):8613-26.
116. Briesse T, Kapoor V, **Lipkin WI**. Natural M-segment reassortment in Potosi and Main Drain viruses: implications for the evolution of orthobunyaviruses. *Archives of virology*. 2007;152(12):2237-47.
117. Quan PL, Palacios G, Jabado OJ, Conlan S, Hirschberg DL, Pozo F, Jack PJ, Cisterna D, Renwick N, Hui J, Drysdale A, Amos-Ritchie R, Baumeister E, Savy V, Lager KM, Richt JA, Boyle DB, Garcia-Sastre A, Casas I, Perez-Brena P, Briesse T, **Lipkin WI**. Detection of respiratory viruses and subtype identification of influenza A viruses by GreeneChipResp oligonucleotide microarray. *Journal of clinical microbiology*. 2007 Aug;45(8):2359-64.
118. Renwick N, Schweiger B, Kapoor V, Liu Z, Villari J, Bullmann R, Miething R, Briesse T, **Lipkin WI**. A recently identified rhinovirus genotype is associated with severe respiratory-tract infection in children in Germany. *The Journal of infectious diseases*. 2007 Dec 15;196(12):1754-60.
119. Palacios G, Quan PL, Jabado OJ, Conlan S, Hirschberg DL, Liu Y, Zhai J, Renwick N, Hui J, Hegyi H, Grolla A, Strong JE, Towner JS, Geisbert TW, Jahrling PB, Buchen-Osmond C, Ellerbrok H, Sanchez-Seco MP, Lussier Y, Formenty P, Nichol MS, Feldmann H, Briesse T, **Lipkin WI**. Panmicrobial oligonucleotide array for diagnosis of infectious diseases. *Emerging infectious diseases*. 2007 Jan;13(1):73-81.
120. Witso E, Palacios G, Ronningen KS, Cinek O, Janowitz D, Rewers M, Grinde B, **Lipkin WI**. Asymptomatic circulation of HEV71 in Norway. *Virus research*. 2007 Jan;123(1):19-29.
121. Zhai J, Palacios G, Towner JS, Jabado O, Kapoor V, Venter M, Grolla A, Briesse T, Paweska J, Swanepoel R, Feldmann H, Nichol ST, **Lipkin WI**. Rapid molecular strategy for filovirus detection and characterization. *Journal of clinical microbiology*. 2007 Jan;45(1):224-6.
122. Williams BL, Yaddanapudi K, Hornig M, **Lipkin WI**. Spatiotemporal analysis of purkinje cell degeneration relative to parasagittal expression domains in a model of neonatal viral infection. *Journal of virology*. 2007 Mar;81(6):2675-87.
123. Medigeshi GR, Lancaster AM, Hirsch AJ, Briesse T, **Lipkin WI**, Defilippis V, Fruh K, Mason PW, Nikolich-Zugich J, Nelson JA. West Nile virus infection activates the unfolded protein response, leading to CHOP induction and apoptosis. *Journal of virology*. 2007 Oct;81(20):10849-60.
124. Cox-Foster DL, Conlan S, Holmes EC, Palacios G, Evans JD, Moran NA, Quan PL, Briesse T, Hornig M, Geiser DM, Martinson V, vanEngelsdorp D, Kalkstein AL, Drysdale A, Hui J, Zhai J, Cui L, Hutchison SK, Simons JF, Egholm M, Pettis JS, **Lipkin WI**. A metagenomic survey of microbes in honey bee colony collapse disorder. *Science*. 2007 Oct 12;318(5848):283-7.
125. Gu J, Xie Z, Gao Z, Liu J, Korteweg C, Ye J, Lau LT, Lu J, Gao Z, Zhang B, McNutt MA, Lu M, Anderson VM, Gong E, Yu AC, **Lipkin WI**. H5N1 infection of the respiratory tract and beyond: a molecular pathology study. *Lancet*. 2007 Sep 29;370(9593):1137-45.
126. Hornig M, Briesse T, Buie T, Bauman ML, Lauwers G, Siemietzki U, Hummel K, Rota PA, Bellini WJ, O'Leary JJ, Sheils O, Alden E, Pickering L, **Lipkin WI**. Lack of association between measles virus vaccine and autism with enteropathy: a case-control study. *PloS one*. 2008;3(9):e3140.
127. **Lipkin WI**. Pathogen discovery. *PLoS pathogens*. 2008 Apr;4(4):e1000002.
128. Honkavuori KS, Shivaprasad HL, Williams BL, Quan PL, Hornig M, Street C, Palacios G, Hutchison SK, Franca M, Egholm M, Briesse T, **Lipkin WI**. Novel borna virus in psittacine birds with proventricular dilatation disease. *Emerging infectious diseases*. 2008 Dec;14(12):1883-6.
129. Williams BL, Hornig M, Yaddanapudi K, **Lipkin WI**. Hippocampal poly(ADP-Ribose) polymerase 1 and caspase 3 activation in neonatal bornavirus infection. *Journal of virology*. 2008 Feb;82(4):1748-58.
130. Kondgen S, Kuhl H, N'Goran PK, Walsh PD, Schenk S, Ernst N, Biek R, Formenty P, Matz-Rensing K, Schweiger B, Junglen S, Ellerbrok H, Nitsche A, Briesse T, **Lipkin WI**, Pauli G,



- Boesch C, Leendertz FH. Pandemic human viruses cause decline of endangered great apes. *Current biology* : CB. 2008 Feb 26;18(4):260-4.
131. Jabado OJ, Liu Y, Conlan S, Quan PL, Hegyi H, Lussier Y, Briese T, Palacios G, **Lipkin WI**. Comprehensive viral oligonucleotide probe design using conserved protein regions. *Nucleic acids research*. 2008 Jan;36(1):e3.
  132. Palacios G, Hui J, Quan PL, Kalkstein A, Honkavuori KS, Bussetti AV, Conlan S, Evans J, Chen YP, vanEngelsdorp D, Efrat H, Pettis J, Cox-Foster D, Holmes EC, Briese T, **Lipkin WI**. Genetic analysis of Israel acute paralysis virus: distinct clusters are circulating in the United States. *Journal of virology*. 2008 Jul;82(13):6209-17.
  133. Quan PL, Briese T, Palacios G, **Lipkin WI**. Rapid sequence-based diagnosis of viral infection. *Antiviral research*. 2008 Jul;79(1):1-5.
  134. Briese T, Renwick N, Venter M, Jarman RG, Ghosh D, Kondgen S, Shrestha SK, Hoegh AM, Casas I, Adjogoua EV, Akoua-Koffi C, Myint KS, Williams DT, Chidlow G, van den Berg R, Calvo C, Koch O, Palacios G, Kapoor V, Villari J, Dominguez SR, Holmes KV, Harnett G, Smith D, Mackenzie JS, Ellerbrok H, Schweiger B, Schonning K, Chadha MS, Leendertz FH, Mishra AC, Gibbons RV, Holmes EC, **Lipkin WI**. Global distribution of novel rhinovirus genotype. *Emerging infectious diseases*. 2008 Jun;14(6):944-7.
  135. Palacios G, Druce J, Du L, Tran T, Birch C, Briese T, Conlan S, Quan PL, Hui J, Marshall J, Simons JF, Egholm M, Paddock CD, Shieh WJ, Goldsmith CS, Zaki SR, Catton M, **Lipkin WI**. A new arenavirus in a cluster of fatal transplant-associated diseases. *The New England journal of medicine*. 2008 Mar 6;358(10):991-8.
  136. Towner JS, Sealy TK, Khristova ML, Albarino CG, Conlan S, Reeder SA, Quan PL, **Lipkin WI**, Downing R, Tappero JW, Okware S, Lutwama J, Bakamutumaho B, Kayiwa J, Comer JA, Rollin PE, Ksiazek TG, Nichol ST. Newly discovered ebola virus associated with hemorrhagic fever outbreak in Uganda. *PLoS pathogens*. 2008 Nov;4(11):e1000212.
  137. Dominguez SR, Briese T, Palacios G, Hui J, Villari J, Kapoor V, Tokarz R, Glode MP, Anderson MS, Robinson CC, Holmes KV, **Lipkin WI**. Multiplex MassTag-PCR for respiratory pathogens in pediatric nasopharyngeal washes negative by conventional diagnostic testing shows a high prevalence of viruses belonging to a newly recognized rhinovirus clade. *Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology*. 2008 Oct;43(2):219-22.
  138. Palacios G, Hornig M, Cisterna D, Savji N, Bussetti AV, Kapoor V, Hui J, Tokarz R, Briese T, Baumeister E, **Lipkin WI**. *Streptococcus pneumoniae* coinfection is correlated with the severity of H1N1 pandemic influenza. *PloS one*. 2009;4(12):e8540.
  139. **Lipkin WI**. SARS: How a global epidemic was stopped. *Global Public Health*. 2009 2009/09/01;4(5):500-1.
  140. Collao X, Palacios G, Sanbonmatsu-Gamez S, Perez-Ruiz M, Negredo AI, Navarro-Mari JM, Grandadam M, Aransay AM, **Lipkin WI**, Tenorio A, Sanchez-Seco MP. Genetic diversity of Toscana virus. *Emerging infectious diseases*. 2009 Apr;15(4):574-7.
  141. De Miranda J, Yaddanapudi K, Hornig M, **Lipkin WI**. Astrocytes recognize intracellular polyinosinic-polycytidylic acid via MDA-5. *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*. 2009 Apr;23(4):1064-71.
  142. Tokarz R, Kapoor V, Samuel JE, Bouyer DH, Briese T, **Lipkin WI**. Detection of tick-borne pathogens by MassTag polymerase chain reaction. *Vector borne and zoonotic diseases*. 2009 Apr;9(2):147-52.
  143. Lierz M, Hafez HM, Honkavuori KS, Gruber AD, Olias P, Abdelwhab EM, Kohls A, **Lipkin WI**, Briese T, Hauck R. Anatomical distribution of avian bornavirus in parrots, its occurrence in clinically healthy birds and ABV-antibody detection. *Avian pathology : journal of the WVPA*. 2009 Dec;38(6):491-6.
  144. Jack PJ, Amos-Ritchie RN, Reverter A, Palacios G, Quan PL, Jabado O, Briese T, **Lipkin WI**, Boyle DB. Microarray-based detection of viruses causing vesicular or vesicular-like lesions in





- livestock animals. *Veterinary microbiology*. 2009 Jan 1;133(1-2):145-53.
145. **Lipkin WI**. Microbe hunting in the 21st century. *Proceedings of the National Academy of Sciences of the United States of America*. 2009 Jan 6;106(1):6-7.
  146. Cornman RS, Chen YP, Schatz MC, Street C, Zhao Y, Desany B, Egholm M, Hutchison S, Pettis JS, **Lipkin WI**, Evans JD. Genomic analyses of the microsporidian *Nosema ceranae*, an emergent pathogen of honey bees. *PLoS pathogens*. 2009 Jun;5(6):e1000466.
  147. Cowled C, Palacios G, Melville L, Weir R, Walsh S, Davis S, Gubala A, **Lipkin WI**, Briese T, Boyle D. Genetic and epidemiological characterization of Stretch Lagoon orbivirus, a novel orbivirus isolated from *Culex* and *Aedes* mosquitoes in northern Australia. *The Journal of general virology*. 2009 Jun;90(Pt 6):1433-9.
  148. Junglen S, Kurth A, Kuehl H, Quan PL, Ellerbrok H, Pauli G, Nitsche A, Nunn C, Rich SM, **Lipkin WI**, Briese T, Leendertz FH. Examining landscape factors influencing relative distribution of mosquito genera and frequency of virus infection. *EcoHealth*. 2009 Jun;6(2):239-49.
  149. Briese T, Paweska JT, McMullan LK, Hutchison SK, Street C, Palacios G, Khristova ML, Weyer J, Swanepoel R, Egholm M, Nichol ST, **Lipkin WI**. Genetic detection and characterization of Lujo virus, a new hemorrhagic fever-associated arenavirus from southern Africa. *PLoS pathogens*. 2009 May;5(5):e1000455.
  150. Solovyov A, Palacios G, Briese T, **Lipkin WI**, Rabadan R. Cluster analysis of the origins of the new influenza A(H1N1) virus. *Euro surveillance : bulletin European sur les maladies transmissibles = European communicable disease bulletin*. 2009 May 28;14(21).
  151. Paweska JT, Sewlall NH, Ksiazek TG, Blumberg LH, Hale MJ, **Lipkin WI**, Weyer J, Nichol ST, Rollin PE, McMullan LK, Paddock CD, Briese T, Mnyaluza J, Dinh TH, Mukonka V, Ching P, Duse A, Richards G, de Jong G, Cohen C, Ikalafeng B, Mugero C, Asomugha C, Malotle MM, Nteo DM, Misiani E, Swanepoel R, Zaki SR, Outbreak C, Investigation T. Nosocomial outbreak of novel arenavirus infection, southern Africa. *Emerging infectious diseases*. 2009 Oct;15(10):1598-602.
  152. Nollens HH, Rivera R, Palacios G, Wellehan JF, Saliki JT, Caseltine SL, Smith CR, Jensen ED, Hui J, **Lipkin WI**, Yochem PK, Wells RS, St Leger J, Venn-Watson S. New recognition of Enterovirus infections in bottlenose dolphins (*Tursiops truncatus*). *Veterinary microbiology*. 2009 Oct 20;139(1-2):170-5.
  153. **Lipkin WI**, Palacios G, Briese T. Diagnostics and discovery in viral hemorrhagic fevers. *Annals of the New York Academy of Sciences*. 2009 Sep;1171 Suppl 1:E6-11.
  154. Siemietzki U, Ashok MS, Briese T, **Lipkin WI**. Identification of RNA instability elements in Borna disease virus. *Virus research*. 2009 Sep;144(1-2):27-34.
  155. Baumeister E, Palacios G, Cisterna D, Solovyov A, Hui J, Savji N, Bussetti AV, Campos A, Pontoriero A, Jabado OJ, Street C, Hirschberg DL, Rabadan R, Alonio V, Molina V, Hutchison S, Egholm M, **Lipkin WI**. Molecular characterization of severe and mild cases of influenza A (H1N1) 2009 strain from Argentina. *Medicina*. 2010;70(6):518-23.
  156. De Miranda J, Yaddanapudi K, Hornig M, Villar G, Serge R, **Lipkin WI**. Induction of Toll-like receptor 3-mediated immunity during gestation inhibits cortical neurogenesis and causes behavioral disturbances. *mBio*. 2010;1(4).
  157. Epstein JH, Quan PL, Briese T, Street C, Jabado O, Conlan S, Ali Khan S, Verdugo D, Hossain MJ, Hutchison SK, Egholm M, Luby SP, Daszak P, **Lipkin WI**. Identification of GBV-D, a novel GB-like flavivirus from old world frugivorous bats (*Pteropus giganteus*) in Bangladesh. *PLoS pathogens*. 2010;6:e1000972.
  158. Holzbauer SM, DeVries AS, Sejvar JJ, Lees CH, Adjemian J, McQuiston JH, Medus C, Lexau CA, Harris JR, Recuenco SE, Belay ED, Howell JF, Buss BF, Hornig M, Gibbins JD, Brueck SE, Smith KE, Danila RN, **Lipkin WI**, Lachance DH, Dyck PJ, Lynfield R. Epidemiologic investigation of immune-mediated polyradiculoneuropathy among abattoir workers exposed to porcine brain. *PloS one*. 2010;5(3):e9782.
  159. Jabado OJ, Conlan S, Quan PL, Hui J, Palacios G, Hornig M, Briese T, **Lipkin WI**.





- Nonparametric methods for the analysis of single-color pathogen microarrays. BMC bioinformatics. 2010;11:354.
160. Kapoor A, Mehta N, Esper F, Poljsak-Prijatelj M, Quan PL, Qaisar N, Delwart E, **Lipkin WI**. Identification and characterization of a new bocavirus species in gorillas. PloS one. 2010;5(7):e11948.
  161. Palacio G, Brieese T, **Lipkin WI**. Microbe hunting in laboratory animal research. ILAR journal / National Research Council, Institute of Laboratory Animal Resources. 2010;51(3):245-54.
  162. Palacios G, Lovoll M, Tengs T, Hornig M, Hutchison S, Hui J, Kongtorp RT, Savji N, Bussetti AV, Solovyov A, Kristoffersen AB, Celone C, Street C, Trifonov V, Hirschberg DL, Rabadan R, Egholm M, Rimstad E, **Lipkin WI**. Heart and skeletal muscle inflammation of farmed salmon is associated with infection with a novel reovirus. PloS one. 2010;5(7):e11487.
  163. Quan PL, Firth C, Street C, Henriquez JA, Petrosov A, Tashmukhamedova A, Hutchison SK, Egholm M, Osinubi MO, Niezgoda M, Ogunkoya AB, Brieese T, Rupprecht CE, **Lipkin WI**. Identification of a severe acute respiratory syndrome coronavirus-like virus in a leaf-nosed bat in Nigeria. mBio. 2010;1(4).
  164. Singh R, Levitt AL, Rajotte EG, Holmes EC, Ostiguy N, Vanengelsdorp D, **Lipkin WI**, Depamphilis CW, Toth AL, Cox-Foster DL. RNA viruses in hymenopteran pollinators: evidence of inter-Taxa virus transmission via pollen and potential impact on non-Apis hymenopteran species. PloS one. 2010;5(12):e14357.
  165. Solovyov A, Greenbaum B, Palacios G, **Lipkin WI**, Rabadan R. Host Dependent Evolutionary Patterns and the Origin of 2009 H1N1 Pandemic Influenza. PLoS currents. 2010;2:RRN1147.
  166. Tokarz R, Jain K, Bennett A, Brieese T, **Lipkin WI**. Assessment of polymicrobial infections in ticks in New York state. Vector borne and zoonotic diseases. 2010 Apr;10(3):217-21.
  167. Kapoor A, Simmonds P, **Lipkin WI**. Discovery and characterization of mammalian endogenous parvoviruses. Journal of virology. 2010 Dec;84(24):12628-35.
  168. Kuhn JH, Becker S, Ebihara H, Geisbert TW, Johnson KM, Kawaoka Y, **Lipkin WI**, Negredo AI, Netesov SV, Nichol ST, Palacios G, Peters CJ, Tenorio A, Volchkov VE, Jahrling PB. Proposal for a revised taxonomy of the family Filoviridae: classification, names of taxa and viruses, and virus abbreviations. Archives of virology. 2010 Dec;155(12):2083-103.
  169. Thaitrong N, Liu P, Brieese T, **Lipkin WI**, Chiesl TN, Higa Y, Mathies RA. Integrated capillary electrophoresis microsystem for multiplex analysis of human respiratory viruses. Analytical chemistry. 2010 Dec 15;82(24):10102-9.
  170. Fan L, Brieese T, **Lipkin WI**. Z proteins of New World arenaviruses bind RIG-I and interfere with type I interferon induction. Journal of virology. 2010 Feb;84(4):1785-91.
  171. Quan PL, Junglen S, Tashmukhamedova A, Conlan S, Hutchison SK, Kurth A, Ellerbrok H, Egholm M, Brieese T, Leendertz FH, **Lipkin WI**. Moussa virus: a new member of the Rhabdoviridae family isolated from Culex decens mosquitoes in Cote d'Ivoire. Virus research. 2010 Jan;147(1):17-24.
  172. Albarino CG, Palacios G, Khristova ML, Erickson BR, Carroll SA, Comer JA, Hui J, Brieese T, St George K, Ksiazek TG, **Lipkin WI**, Nichol ST. High diversity and ancient common ancestry of lymphocytic choriomeningitis virus. Emerging infectious diseases. 2010 Jul;16(7):1093-100.
  173. Stoltenberg C, Schjolberg S, Bresnahan M, Hornig M, Hirtz D, Dahl C, Lie KK, Reichborn-Kjennerud T, Schreuder P, Alsaker E, Øyen AS, Magnus P, Surén P, Susser E, **Lipkin WI**, Group ABCS. The Autism Birth Cohort: a paradigm for gene-environment-timing research. Molecular psychiatry. 2010 Jul;15(7):676-80.
  174. Yaddanapudi K, Hornig M, Serge R, De Miranda J, Baghban A, Villar G, **Lipkin WI**. Passive transfer of streptococcus-induced antibodies reproduces behavioral disturbances in a mouse model of pediatric autoimmune neuropsychiatric disorders associated with streptococcal infection. Molecular psychiatry. 2010 Jul;15(7):712-26.
  175. Quan PL, Wagner TA, Brieese T, Torgerson TR, Hornig M, Tashmukhamedova A, Firth C, Palacios G, Baisre-De-Leon A, Paddock CD, Hutchison SK, Egholm M, Zaki SR, Goldman JE,



- Ochs HD, **Lipkin WI**. Astrovirus encephalitis in boy with X-linked agammaglobulinemia. *Emerging infectious diseases*. 2010 Jun;16(6):918-25.
176. Gray P, Hoppes S, Suchodolski P, Mirhosseini N, Payne S, Villanueva I, Shivaprasad HL, Honkavuori KS, **Lipkin WI**, Brieze T, Reddy SM, Tizard I. Use of avian bornavirus isolates to induce proventricular dilatation disease in conures. *Emerging infectious diseases*. 2010 Mar;16(3):473-9.
  177. Palacios G, Savji N, Hui J, Travassos da Rosa A, Popov V, Brieze T, Tesh R, **Lipkin WI**. Genomic and phylogenetic characterization of Merino Walk virus, a novel arenavirus isolated in South Africa. *The Journal of general virology*. 2010 May;91(Pt 5):1315-24.
  178. Homaira N, Rahman M, Hossain MJ, Epstein JH, Sultana R, Khan MS, Podder G, Nahar K, Ahmed B, Gurley ES, Daszak P, **Lipkin WI**, Rollin PE, Comer JA, Ksiazek TG, Luby SP. Nipah virus outbreak with person-to-person transmission in a district of Bangladesh, 2007. *Epidemiology and infection*. 2010 Nov;138(11):1630-6.
  179. Keller DL, Honkavuori KS, Brieze T, **Lipkin WI**, Muthuswamy A, Steinberg H, Sladky KK. Proventricular dilatation disease associated with Avian bornavirus in a scarlet macaw (*Ara macao*). *Journal of veterinary diagnostic investigation : official publication of the American Association of Veterinary Laboratory Diagnosticians, Inc.* 2010 Nov;22(6):961-5.
  180. Collao X, Palacios G, de Ory F, Sanbonmatsu S, Perez-Ruiz M, Navarro JM, Molina R, Hutchison SK, **Lipkin WI**, Tenorio A, Sanchez-Seco MP. Granada virus: a natural phlebovirus reassortant of the sandfly fever Naples serocomplex with low seroprevalence in humans. *The American journal of tropical medicine and hygiene*. 2010 Oct;83(4):760-5.
  181. Kapoor A, Simmonds P, **Lipkin WI**, Zaidi S, Delwart E. Use of nucleotide composition analysis to infer hosts for three novel picorna-like viruses. *Journal of virology*. 2010 Oct;84(19):10322-8.
  182. **Lipkin WI**. Microbe hunting. *Microbiology and molecular biology reviews: MMBR*. 2010 Sep;74(3):363-77.
  183. Burbelo PD, Ching KH, Esper F, Iadarola MJ, Delwart E, **Lipkin WI**, Kapoor A. Serological studies confirm the novel astrovirus HMOAstV-C as a highly prevalent human infectious agent. *PloS one*. 2011;6(8):e22576.
  184. Kapoor A, Hornig M, Asokan A, Williams B, Henriquez JA, **Lipkin WI**. Bocavirus episome in infected human tissue contains non-identical termini. *PloS one*. 2011;6(6):e21362.
  185. Tokarz R, Firth C, Street C, Cox-Foster DL, **Lipkin WI**. Lack of evidence for an association between Iridovirus and colony collapse disorder. *PloS one*. 2011;6(6):e21844.
  186. Tokarz R, Kapoor V, Wu W, Lurio J, Jain K, Mostashari F, Brieze T, **Lipkin WI**. Longitudinal molecular microbial analysis of influenza-like illness in New York City, May 2009 through May 2010. *Virology journal*. 2011;8:288.
  187. Williams BL, Hornig M, Buie T, Bauman ML, Cho Paik M, Wick I, Bennett A, Jabado O, Hirschberg DL, **Lipkin WI**. Impaired carbohydrate digestion and transport and mucosal dysbiosis in the intestines of children with autism and gastrointestinal disturbances. *PloS one*. 2011;6(9):e24585.
  188. Yaddanapudi K, De Miranda J, Hornig M, **Lipkin WI**. Toll-like receptor 3 regulates neural stem cell proliferation by modulating the Sonic Hedgehog pathway. *PloS one*. 2011;6(10):e26766.
  189. Zirkel F, Kurth A, Quan PL, Brieze T, Ellerbrok H, Pauli G, Leendertz FH, **Lipkin WI**, Ziebuhr J, Drosten C, Junglen S. An insect nidovirus emerging from a primary tropical rainforest. *mBio*. 2011;2(3):e00077-11.
  190. Carey AJ, Verdugo D, Palacios G, **Lipkin WI**, Polin RA. MassTag polymerase chain reaction investigation of neonatal sepsis. *Journal of Neonatal-Perinatal Medicine*. 2011 01/01;4(4):323-7.
  191. Palacios G, Lowenstine LJ, Cranfield MR, Gilardi KV, Spelman L, Lukasik-Braum M, Kinani JF, Mudakikwa A, Nyirakaragire E, Bussetti AV, Savji N, Hutchison S, Egholm M, **Lipkin WI**. Human metapneumovirus infection in wild mountain gorillas, Rwanda. *Emerging infectious diseases*. 2011 Apr;17(4):711-3.
  192. Palacios G, Tesh R, Travassos da Rosa A, Savji N, Sze W, Jain K, Serge R, Guzman H,



- Guevara C, Nunes MR, Nunes-Neto JP, Kochel T, Hutchison S, Vasconcelos PF, **Lipkin WI**. Characterization of the Candiru antigenic complex (Bunyaviridae: Phlebovirus), a highly diverse and reassorting group of viruses affecting humans in tropical America. *Journal of virology*. 2011 Apr;85(8):3811-20.
193. Franco L, Palacios G, Martinez JA, Vazquez A, Savji N, De Ory F, Sanchez-Seco MP, Martin D, **Lipkin WI**, Tenorio A. First report of sylvatic DENV-2-associated dengue hemorrhagic fever in West Africa. *PLoS neglected tropical diseases*. 2011 Aug;5(8):e1251.
  194. Daszak P, **Lipkin WI**. The search for meaning in virus discovery. *Current opinion in virology*. 2011 Dec;1(6):620-3.
  195. **Lipkin WI**, Brieese T, Hornig M. Borna disease virus - fact and fantasy. *Virus research*. 2011 Dec;162(1-2):162-72.
  196. Allison AB, Palacios G, Travassos da Rosa A, Popov VL, Lu L, Xiao SY, DeToy K, Brieese T, **Lipkin WI**, Keel MK, Stallknecht DE, Bishop GR, Tesh RB. Characterization of Durham virus, a novel rhabdovirus that encodes both a C and SH protein. *Virus research*. 2011 Jan;155(1):112-22.
  197. Wrammert J, Koutsouanos D, Li GM, Edupuganti S, Sui J, Morrissey M, McCausland M, Skountzou I, Hornig M, **Lipkin WI**, Mehta A, Razavi B, Del Rio C, Zheng NY, Lee JH, Huang M, Ali Z, Kaur K, Andrews S, Amara RR, Wang Y, Das SR, O'Donnell CD, Yewdell JW, Subbarao K, Marasco WA, Mulligan MJ, Compans R, Ahmed R, Wilson PC. Broadly cross-reactive antibodies dominate the human B cell response against 2009 pandemic H1N1 influenza virus infection. *The Journal of experimental medicine*. 2011 Jan 17;208(1):181-93.
  198. Savji N, Palacios G, Travassos da Rosa A, Hutchison S, Celone C, Hui J, Brieese T, Calisher CH, Tesh RB, **Lipkin WI**. Genomic and phylogenetic characterization of Leanyer virus, a novel orthobunyavirus isolated in northern Australia. *The Journal of general virology*. 2011 Jul;92(Pt 7):1676-87.
  199. Wunschmann A, Honkavuori K, Brieese T, **Lipkin WI**, Shivers J, Armien AG. Antigen tissue distribution of Avian bornavirus (ABV) in psittacine birds with natural spontaneous proventricular dilatation disease and ABV genotype 1 infection. *Journal of veterinary diagnostic investigation : official publication of the American Association of Veterinary Laboratory Diagnosticians, Inc.* 2011 Jul;23(4):716-26.
  200. Kapoor A, Simmonds P, Gerold G, Qaisar N, Jain K, Henriquez JA, Firth C, Hirschberg DL, Rice CM, Shields S, **Lipkin WI**. Characterization of a canine homolog of hepatitis C virus. *Proceedings of the National Academy of Sciences of the United States of America*. 2011 Jul 12;108(28):11608-13.
  201. Nunes MR, Palacios G, Nunes KN, Casseb SM, Martins LC, Quaresma JA, Savji N, **Lipkin WI**, Vasconcelos PF. Evaluation of two molecular methods for the detection of Yellow fever virus genome. *Journal of virological methods*. 2011 Jun;174(1-2):29-34.
  202. Palacios G, Cowled C, Bussetti AV, Savji N, Weir R, Wick I, Travassos da Rosa A, Calisher CH, Tesh RB, Boyle D, **Lipkin WI**. Rapid molecular strategy for orbivirus detection and characterization. *Journal of clinical microbiology*. 2011 Jun;49(6):2314-7.
  203. Palacios G, da Rosa AT, Savji N, Sze W, Wick I, Guzman H, Hutchison S, Tesh R, **Lipkin WI**. Aguacate virus, a new antigenic complex of the genus Phlebovirus (family Bunyaviridae). *The Journal of general virology*. 2011 Jun;92(Pt 6):1445-53.
  204. Honkavuori KS, Shivaprasad HL, Brieese T, Street C, Hirschberg DL, Hutchison SK, **Lipkin WI**. Novel picornavirus in Turkey poults with hepatitis, California, USA. *Emerging infectious diseases*. 2011 Mar;17(3):480-7.
  205. Kapoor A, Simmonds P, Dubovi EJ, Qaisar N, Henriquez JA, Medina J, Shields S, **Lipkin WI**. Characterization of a canine homolog of human Aichivirus. *Journal of virology*. 2011 Nov;85(21):11520-5.
  206. Palacios G, Wellehan JF, Jr., Raverty S, Bussetti AV, Hui J, Savji N, Nollens HH, Lambourn D, Celone C, Hutchison S, Calisher CH, Nielsen O, **Lipkin WI**. Discovery of an orthoreovirus in the



- aborted fetus of a Steller sea lion (*Eumetopias jubatus*). The Journal of general virology. 2011 Nov;92(Pt 11):2558-65.
207. Negredo A, Palacios G, Vazquez-Moron S, Gonzalez F, Dopazo H, Molero F, Juste J, Quetglas J, Savji N, de la Cruz Martinez M, Herrera JE, Pizarro M, Hutchison SK, Echevarria JE, **Lipkin WI**, Tenorio A. Discovery of an ebolavirus-like filovirus in Europe. PLoS pathogens. 2011 Oct;7(10):e1002304. \* **Shared Senior Authorship**
  208. Quan PL, Williams DT, Johansen CA, Jain K, Petrosov A, Diviney SM, Tashmukhamedova A, Hutchison SK, Tesh RB, Mackenzie JS, Brieze T, **Lipkin WI**. Genetic characterization of K13965, a strain of Oak Vale virus from Western Australia. Virus research. 2011 Sep;160(1-2):206-13.
  209. **Lipkin WI**. Biodefense: 10 years after. Helping Hollywood create and battle a pandemic. Interview by Jon Cohen. Science. 2011 Sep 2;333(6047):1219.
  210. Alter HJ, Mikovits JA, Switzer WM, Ruscetti FW, Lo SC, Klimas N, Komaroff AL, Montoya JG, Bateman L, Levine S, Peterson D, Levin B, Hanson MR, Genfi A, Bhat M, Zheng H, Wang R, Li B, Hung GC, Lee LL, Sameroff S, Heneine W, Coffin J, Hornig M, **Lipkin WI**. A multicenter blinded analysis indicates no association between chronic fatigue syndrome/myalgic encephalomyelitis and either xenotropic murine leukemia virus-related virus or polytropic murine leukemia virus. mBio. 2012;3(5).
  211. Anthony SJ, St Leger JA, Pugliares K, Ip HS, Chan JM, Carpenter ZW, Navarrete-Macias I, Sanchez-Leon M, Saliki JT, Pedersen J, Karesh W, Daszak P, Rabadan R, Rowles T, **Lipkin WI**. Emergence of fatal avian influenza in New England harbor seals. mBio. 2012;3(4):e00166-12.
  212. Duale N, Brunborg G, Ronningen KS, Brieze T, Aarem J, Aas KK, Magnus P, Stoltenberg C, Susser E, **Lipkin WI**. Human blood RNA stabilization in samples collected and transported for a large biobank. BMC research notes. 2012;5:510.
  213. **Lipkin WI**. Biocontainment in gain-of-function infectious disease research. mBio. 2012;3(5).
  214. Smith KM, Anthony SJ, Switzer WM, Epstein JH, Seimon T, Jia H, Sanchez MD, Huynh TT, Galland GG, Shapiro SE, Sleeman JM, McAloose D, Stuchin M, Amato G, Kolokotronis SO, **Lipkin WI**, Karesh WB, Daszak P, Marano N. Zoonotic viruses associated with illegally imported wildlife products. PloS one. 2012;7(1):e29505.
  215. Uhlemann AC, Porcella SF, Trivedi S, Sullivan SB, Hafer C, Kennedy AD, Barbian KD, McCarthy AJ, Street C, Hirschberg DL, **Lipkin WI**, Lindsay JA, DeLeo FR, Lowy FD. Identification of a highly transmissible animal-independent *Staphylococcus aureus* ST398 clone with distinct genomic and cell adhesion properties. mBio. 2012;3(2).
  216. Williams BL, Hornig M, Parekh T, **Lipkin WI**. Application of novel PCR-based methods for detection, quantitation, and phylogenetic characterization of *Sutterella* species in intestinal biopsy samples from children with autism and gastrointestinal disturbances. mBio. 2012;3(1).
  217. Firth C, Tokarz R, Simith DB, Nunes MR, Bhat M, Rosa ES, Medeiros DB, Palacios G, Vasconcelos PF, **Lipkin WI**. Diversity and distribution of hantaviruses in South America. Journal of virology. 2012 Dec;86(24):13756-66.
  218. Nunes MR, Palacios G, Cardoso JF, Martins LC, Sousa EC, Jr., de Lima CP, Medeiros DB, Savji N, Desai A, Rodrigues SG, Carvalho VL, **Lipkin WI**, Vasconcelos PF. Genomic and phylogenetic characterization of Brazilian yellow fever virus strains. Journal of virology. 2012 Dec;86(24):13263-71.
  219. Morse SS, Mazet JA, Woolhouse M, Parrish CR, Carroll D, Karesh WB, Zambrana-Torrel C, **Lipkin WI**, Daszak P. Prediction and prevention of the next pandemic zoonosis. Lancet. 2012 Dec 1;380(9857):1956-65.
  220. Bussetti AV, Palacios G, Travassos da Rosa A, Savji N, Jain K, Guzman H, Hutchison S, Popov VL, Tesh RB, **Lipkin WI**. Genomic and antigenic characterization of Jos virus. The Journal of general virology. 2012 Feb;93(Pt 2):293-8.
  221. Kapoor A, Mehta N, Dubovi EJ, Simmonds P, Govindasamy L, Medina JL, Street C, Shields S,





- Lipkin WI.** Characterization of novel canine bocaviruses and their association with respiratory disease. *The Journal of general virology*. 2012 Feb;93(Pt 2):341-6.
222. Burbelo PD, Dubovi EJ, Simmonds P, Medina JL, Henriquez JA, Mishra N, Wagner J, Tokarz R, Cullen JM, Iadarola MJ, Rice CM, **Lipkin WI**, Kapoor A. Serology-enabled discovery of genetically diverse hepaciviruses in a new host. *Journal of virology*. 2012 Jun;86(11):6171-8.
  223. Kapoor A, Dubovi EJ, Henriquez-Rivera JA, **Lipkin WI**. Complete genome sequence of the first canine circovirus. *Journal of virology*. 2012 Jun;86(12):7018.
  224. Forrester NL, Palacios G, Tesh RB, Savji N, Guzman H, Sherman M, Weaver SC, **Lipkin WI**. Genome-scale phylogeny of the alphavirus genus suggests a marine origin. *Journal of virology*. 2012 Mar;86(5):2729-38.
  225. Chowdhary R, Street C, Travassos da Rosa A, Nunes MR, Tee KK, Hutchison SK, Vasconcelos PF, Tesh RB, **Lipkin WI**, Brieese T. Genetic characterization of the Wyeomyia group of orthobunyaviruses and their phylogenetic relationships. *The Journal of general virology*. 2012 May;93(Pt 5):1023-34.
  226. Hornig M, Brieese T, Licinio J, Khabbaz RF, Altshuler LL, Potkin SG, Schwemmle M, Siemietzki U, Mintz J, Honkavuori K, Kraemer HC, Egan MF, Whybrow PC, Bunney WE, **Lipkin WI**. Absence of evidence for bornavirus infection in schizophrenia, bipolar disorder and major depressive disorder. *Molecular psychiatry*. 2012 May;17(5):486-93.
  227. Perez-Ruiz M, Navarro-Mari JM, Sanchez-Seco MP, Gegundez MI, Palacios G, Savji N, **Lipkin WI**, Fedele G, de Ory-Manchon F. Lymphocytic choriomeningitis virus-associated meningitis, southern Spain. *Emerging infectious diseases*. 2012 May;18(5):855-8.
  228. Seimon TA, McAloose D, Raphael B, Honkavuori KS, Chang T, Hirschberg DL, **Lipkin WI**. A novel herpesvirus in 3 species of pheasants: mountain peacock pheasant (*Polyplectron inopinatum*), Malayan peacock pheasant (*Polyplectron malacense*), and Congo peafowl (*Afropavo congensis*). *Veterinary pathology*. 2012 May;49(3):482-91.
  229. Tokarz R, Firth C, Madhi SA, Howie SR, Wu W, Sall AA, Haq S, Brieese T, **Lipkin WI**. Worldwide emergence of multiple clades of enterovirus 68. *The Journal of general virology*. 2012 Sep;93(Pt 9):1952-8.
  230. Nasar F, Palacios G, Gorchakov RV, Guzman H, Da Rosa AP, Savji N, Popov VL, Sherman MB, **Lipkin WI**, Tesh RB, Weaver SC. Eilat virus, a unique alphavirus with host range restricted to insects by RNA replication. *Proceedings of the National Academy of Sciences of the United States of America*. 2012 Sep 4;109(36):14622-7.
  231. Anthony SJ, Epstein JH, Murray KA, Navarrete-Macias I, Zambrana-Torrel CM, Solovyov A, Ojeda-Flores R, Arrigo NC, Islam A, Ali Khan S, Hosseini P, Bogich TL, Olival KJ, Sanchez-Leon MD, Karesh WB, Goldstein T, Luby SP, Morse SS, Mazet JA, Daszak P, **Lipkin WI**. A strategy to estimate unknown viral diversity in mammals. *mBio*. 2013;4(5).
  232. Anthony SJ, St Leger JA, Navarrete-Macias I, Nilson E, Sanchez-Leon M, Liang E, Seimon T, Jain K, Karesh W, Daszak P, Brieese T, **Lipkin WI**. Identification of a novel cetacean polyomavirus from a Common Dolphin (*Delphinus delphis*) with tracheobronchitis. *PloS one*. 2013;8(7):e68239.
  233. Goldstein T, Mena I, Anthony SJ, Medina R, Robinson PW, Greig DJ, Costa DP, **Lipkin WI**, Garcia-Sastre A, Boyce WM. Pandemic H1N1 influenza isolated from free-ranging Northern Elephant Seals in 2010 off the central California coast. *PloS one*. 2013;8(5):e62259.
  234. Kapoor A, Simmonds P, Scheel TK, Hjelle B, Cullen JM, Burbelo PD, Chauhan LV, Duraisamy R, Sanchez Leon M, Jain K, Vandegrift KJ, Calisher CH, Rice CM, **Lipkin WI**. Identification of rodent homologs of hepatitis C virus and pegiviruses. *mBio*. 2013;4(2).
  235. **Lipkin WI**, Firth C. Viral surveillance and discovery. *Current opinion in virology*. 2013 Apr;3(2):199-204.
  236. **Lipkin WI**, Osterhaus A. Emerging viruses. *Current opinion in virology*. 2013 Apr;3(2):168-9.
  237. Palacios G, Savji N, Travassos da Rosa A, Desai A, Sanchez-Seco MP, Guzman H, **Lipkin WI**, Tesh R. Characterization of the Salehabad virus species complex of the genus Phlebovirus





- (Bunyaviridae). The Journal of general virology. 2013 Apr;94(Pt 4):837-42.
238. Kapoor A, Simmonds P, Cullen JM, Scheel T, Medina JL, Giannitti F, Nishiuchi E, Brock KV, Burbelo PD, Rice CM, **Lipkin WI**. Identification of a pegivirus (GBV-like virus) that infects horses. Journal of virology. 2013 Apr 17.
  239. Quan PL, Firth C, Conte JM, Williams SH, Zambrana-Torrel CM, Anthony SJ, Ellison JA, Gilbert AT, Kuzmin IV, Niezgoda M, Osinubi MO, Recuenco S, Markotter W, Breiman RF, Kalemba L, Malekani J, Lindblade KA, Rostal MK, Ojeda-Flores R, Suzan G, Davis LB, Blau DM, Ogunkoya AB, Alvarez Castillo DA, Moran D, Ngam S, Akaibe D, Agwanda B, Brieze T, Epstein JH, Daszak P, Rupprecht CE, Holmes EC, **Lipkin WI**. Bats are a major natural reservoir for hepaciviruses and pegiviruses. Proceedings of the National Academy of Sciences of the United States of America. 2013 Apr 22.
  240. Firth C, **Lipkin WI**. The genomics of emerging pathogens. Annual review of genomics and human genetics. 2013 Aug 31;14:281-300.
  241. **Lipkin WI**. The changing face of pathogen discovery and surveillance. Nature reviews Microbiology. 2013 Feb;11(2):133-41.
  242. Olival KJ, Islam A, Yu M, Anthony SJ, Epstein JH, Khan SA, Khan SU, Crameri G, Wang LF, **Lipkin WI**, Luby SP, Daszak P. Ebola virus antibodies in fruit bats, Bangladesh. Emerging infectious diseases. 2013 Feb;19(2):270-3.
  243. Wensman JJ, Munir M, Thaduri S, Hornaeus K, Rizwan M, Blomstrom AL, Brieze T, **Lipkin WI**, Berg M. The X proteins of bornaviruses interfere with type I interferon signaling. The Journal of general virology. 2013 Feb;94(Pt 2):263-9.
  244. Surén P, Roth C, Bresnahan M, Haugen M, Hornig M, Hirtz D, Lie KK, **Lipkin WI**, Magnus P, Reichborn-Kjennerud T, Schjolberg S, Davey Smith G, Øyen AS, Susser E, Stoltenberg C. Association between maternal use of folic acid supplements and risk of autism spectrum disorders in children. JAMA: the journal of the American Medical Association. 2013 Feb 13;309(6):570-7.
  245. Al-Samarrai T, Wu W, Begier E, Lurio J, Tokarz R, Plagianos M, Calman N, Mostashari F, Brieze T, **Lipkin WI**, Greene C. Evaluation of a plot respiratory virus surveillance system linking electronic health record and diagnostic data. Journal of public health management and practice : JPHMP. 2013 Feb 27.
  246. Tokarz R, Hirschberg DL, Sameroff S, Haq S, Luna G, Bennett AJ, Silva M, Leguia M, Kasper M, Bausch DG, **Lipkin WI**. Genomic analysis of two novel human enterovirus C genotypes found in respiratory samples from Peru. The Journal of general virology. 2013 Jan;94(Pt 1):120-7.
  247. Hornig M, **Lipkin WI**. Immune-mediated animal models of Tourette syndrome. Neuroscience and biobehavioral reviews. 2013 Jan 10.
  248. Palacios G, Forrester NL, Savji N, Travassos da Rosa AP, Guzman H, Detoy K, Popov VL, Walker PJ, **Lipkin WI**, Vasilakis N, Tesh RB. Characterization of Farmington virus, a novel virus from birds that is distantly related to members of the family Rhabdoviridae. Virology journal. 2013 Jul 1;10(1):219.
  249. Nilsen RM, Surén P, Gunnes N, Alsaker ER, Bresnahan M, Hirtz D, Hornig M, Lie KK, **Lipkin WI**, Reichborn-Kjennerud T, Roth C, Schjolberg S, Davey Smith G, Susser E, Vollset SE, Øyen AS, Magnus P, Stoltenberg C. Analysis of self-selection bias in a population-based cohort study of autism spectrum disorders. Paediatric and perinatal epidemiology. 2013 Jul 25.
  250. Tokarz R, Haq S, Sameroff S, Howie SR, **Lipkin WI**. Genomic analysis of coxsackieviruses A1, A19, A22, enteroviruses 113 and 104: viruses representing two clades with distinct tropism within enterovirus C. The Journal of general virology. 2013 Jun 12.
  251. Palacios G, Savji N, Travassos da Rosa A, Guzman H, Yu X, Desai A, Rosen GE, Hutchison S, **Lipkin WI**, Tesh R. Characterization of the Uukuniemi virus group (Phlebovirus: Bunyaviridae): evidence for seven distinct species. Journal of virology. 2013 Mar;87(6):3187-95.
  252. Tokarz R, Brieze T, Morris G, Ideh R, Chimah O, Ebruke B, Desai A, Haq S, Sameroff S, Howie SR, **Lipkin WI**. Serotype analysis of Streptococcus pneumoniae in lung and nasopharyngeal



- aspirates from children in the Gambia by MassTag PCR. *Journal of clinical microbiology*. 2013 Mar;51(3):995-7.
253. Vasilakis N, Forrester NL, Palacios G, Nasar F, Savji N, Rossi SL, Guzman H, Wood TG, Popov V, Gorchakov R, Gonzalez AV, Haddow AD, Watts DM, da Rosa AP, Weaver SC, **Lipkin WI**, Tesh RB. Negevirus: a proposed new taxon of insect-specific viruses with wide geographic distribution. *Journal of virology*. 2013 Mar;87(5):2475-88.
  254. Lingappa UF, Wu X, Macieik A, Yu SF, Atuegbu A, Corpuz M, Francis J, Nichols C, Calayag A, Shi H, Ellison JA, Harrell EK, Asundi V, Lingappa JR, Prasad MD, **Lipkin WI**, Dey D, Hurt CR, Lingappa VR, Hansen WJ, Rupprecht CE. Host-rabies virus protein-protein interactions as druggable antiviral targets. *Proceedings of the National Academy of Sciences of the United States of America*. 2013 Mar 5;110(10):E861-8.
  255. Bhat N, Tokarz R, Jain K, Haq S, Weatherholtz R, Chandran A, Karron R, Reid R, Santosham M, O'Brien KL, **Lipkin WI**. A prospective study of agents associated with acute respiratory infection among Young American Indian Children. *The Pediatric infectious disease journal*. 2013 Mar 6.
  256. Anthony SJ, Ojeda-Flores R, Rico-Chavez O, Navarrete-Macias I, Zambrana-Torrel CM, Rostal MK, Epstein JH, Tipps T, Liang E, Sanchez-Leon M, Sotomayor-Bonilla J, Aguirre AA, Avila-Flores R, Medellin RA, Goldstein T, Suzan G, Daszak P, **Lipkin WI**. Coronaviruses in bats from Mexico. *The Journal of general virology*. 2013 May;94(Pt 5):1028-38.
  257. Kapoor A, Tesh RB, Duraisamy R, Popov VL, Travassos da Rosa AP, **Lipkin WI**. A novel mosquito-borne Orbivirus species found in South-east Asia. *The Journal of general virology*. 2013 May;94(Pt 5):1051-7.
  258. Hsu CC, Tokarz R, Briese T, Tsai HC, Quan PL, **Lipkin WI**. Use of staged molecular analysis to determine causes of unexplained central nervous system infections. *Emerging infectious diseases*. 2013 Sep;19(9):1470-7.
  259. Surén P, Stoltenberg C, Bresnahan M, Hirtz D, Lie KK, **Lipkin WI**, Magnus P, Reichborn-Kjennerud T, Schjølberg S, Susser E, Øyen AS, Li L, Hornig M. Early growth patterns in children with autism. *Epidemiology*. 2013 Sep;24(5):660-70.
  260. Solovyov A, **Lipkin WI**. Centroid based clustering of high throughput sequencing reads based on n-mer counts. *BMC bioinformatics*. 2013 Sep 8;14(1):268.
  261. Memish ZA, Mishra N, Olival KJ, Fagbo SF, Kapoor V, Epstein JH, Alhakeem R, Durosinioun A, Al Asmari M, Islam A, Kapoor A, Briese T, Daszak P, Al Rabeeah AA, **Lipkin WI**. Middle East respiratory syndrome coronavirus in bats, Saudi Arabia. *Emerging infectious diseases*. 2013 Nov;19(11).
  262. Marklewitz M, Zirkel F, Rwego IB, Heidemann H, Trippner P, Kurth A, Kallies R, Briese T, **Lipkin WI**, Drosten C, Gillespie TR, Junglen S. Discovery of a unique novel clade of mosquito-associated bunyaviruses. *Journal of virology*. 2013 Dec;87(23):12850-65.
  263. Gunnes N, Surén P, Bresnahan M, Hornig M, Lie KK, **Lipkin WI**, Magnus P, Nilsen RM, Reichborn-Kjennerud T, Schjølberg S, Susser ES, Øyen AS, Stoltenberg C. Interpregnancy interval and risk of autistic disorder. *Epidemiology*. 2013 Nov;24(6):906-12.
  264. Palacios G, Tesh R, Savji N, Travassos da Rosa AP, Guzman H, Bussetti AV, Desai A, Ladner J, Sanchez-Seco M, **Lipkin WI**. Characterization of the Sandfly fever Naples species complex and description of a new Karimabad species complex (genus Phlebovirus, family Bunyaviridae). *The Journal of general virology*. 2013 Oct 4.
  265. Nunes MRT, Palacios G, Faria NR, Sousa Jr. EC, Pantoja JA, Rodrigues SG, Carvalho VL, Medeiros DBA, Savji N, Baele G, Suchard MA, Lemey P, Vasconcelos PFC, **Lipkin WI**. Air travel is associated with intracontinental spread of dengue virus serotypes 1-3 lineages in Brazil. *PLoS Neglected Tropical Diseases*. 2014 Apr 17;8(4):e2769.
  266. Surén P, Gunnes N, Roth C, Bresnahan M, Hornig M, Hirtz D, Lie KK, **Lipkin WI**, Magnus P, Reichborn-Kjennerud T, Schjølberg S, Susser E, Øyen AS, Smith GD, Stoltenberg C. Parental obesity and risk of autism spectrum disorder. *Pediatrics*. 2014 May;133(5):e1128-38.



267. Razuri H, Tokarz R, Gherzi BM, Salmon-Mulanovich G, Guezala MC, Albuja C, Mendoza AP, Tinoco YO, Cruz C, Silva M, Vasquez A, Pacheco V, Stroher U, Guerrero LW, Cannon D, Nichol ST, Hirschberg DL, **Lipkin WI**, Bausch DG, Montgomery JM. Andes hantavirus variant in rodents, southern Amazon basin, Peru. *Emerging infectious diseases*. 2014 Feb;20(2):257-60.
268. Alagaili AN, Briese T, Mishra N, Kapoor V, Sameroff SC, de Wit E, Munster VJ, Hensley LE, Zalmout IS, Kapoor A, Epstein JH, Karesh WB, Daszak P, Mohammed OB, **Lipkin WI**. Middle East respiratory syndrome coronavirus (MERS-CoV) infection in dromedary camels in Saudi Arabia. *mBio*. 2014 Feb 25;5(2).
269. Anthony SJ, Garner MM, Palminteri L, Navarrete-Macias I, Sanchez-Leon MD, Briese T, Daszak P, **Lipkin WI**. West Nile Virus in the British Virgin Islands. *EcoHealth*. 2014; 11(2).
270. Ladner, JT, Savji N, Lofts L, Travassos da Rosa AP, Wiley MR, Gestole MC, Rosen GE, Guzman H, Vasconcelos PFC, Nunes MRT, **Lipkin WI**, Tesh R, Palacios GR. Genomic and phylogenetic characterization of viruses included in the Manzanilla and Oropouche species complexes of the genus Orthobunyavirus, family Bunyaviridae. *Journal of General Virology*. 2014 May;95(Pt 5):1055-66.
271. Tokarz R, Sameroff S, Leon MS, Jain K, **Lipkin WI**. Genome characterization of Long Island tick rhabdovirus, a new virus identified in Amblyomma americanum ticks. *Virology Journal*. 2014 Feb 11;11(1):26.
272. Briese T, Chowdhary R, Travassos da Rosa A, Hutchison SK, Popov V, Street C, Tesh RB, **Lipkin WI**. Upolu virus and Aransas Bay virus, two presumptive bunyaviruses, are novel members of the family Orthomyxoviridae. *Journal of Virology*. 2014 May;88(10):5298-309.
273. Stenberg N, Bresnahan M, Gunnes N, Hirtz D, Hornig M, Lie KK, **Lipkin WI**, Lord C, Magnus P, Reichborn-Kjennerud T, Schjølberg S, Surén P, Susser E, Svendsen BK, von Tetzchner S, Oyen AS, Stoltenberg C. Identifying Children with Autism Spectrum Disorder at 18 Months in a General Population Sample. *Paediatric Perinatal Epidemiology*. 2014 May;28(3):255-62.
274. Briese T, Mishra N, Jain K, Zalmout IS, Jabado OJ, Karesh WB, Daszak P, Mohammed OB, Alagaili AN, **Lipkin WI**. Middle East respiratory syndrome coronavirus quasispecies that include homologues of human isolates revealed through whole-genome analysis and virus cultured from dromedary camels in Saudi Arabia. *mBio*. 2014 April 5(3):e01146-0114.
275. Chen YP, Pettis JS, Corona M, Chen WP, Li JC, Spivak M, Visscher PK, DeGrandi-Hoffman G, Boncristiani H, Zhao Y, vanEngelsdorp D, Delaplane K, Solter L, Drummond F, Kramer M, **Lipkin WI**, Palacios G, Hamilton MC, Smith B, Huang SK, Zheng HQ, Li JL, Zhang X, Zhou AF, Wu LY, Zhou JZ, Lee ML, Teixeira EW, Li ZG, Evans JD. Israeli acute paralysis virus: epidemiology, pathogenesis and implications for honey bee health. *PLoS Pathogens*. 2014 Jul 10(7): e1004261.
276. Gloria Arriagada G, Metzger MJ, Muttray A, Sherry J, Reinisch C, Street C, **Lipkin WI**, Goff SP. Activation of transcription and retrotransposition of a novel retroelement, *Steamer*, in neoplastic hemocytes of the mollusk *Mya arenaria*. *Proceedings of the National Academy of Sciences*. 2014 Sep 30;111(39):14175-80.x
277. Howie SR, Morris GA, Tokarz R, Ebruke BE, Machuka EM, Ideh RC, Chimah O, Secka O, Townend J, Dione M, Oluwalana C, Njie M, Jallow M, Hill PC, Antonio M, Greenwood B, Briese T, Mulholland K, Corrah T, **Lipkin WI**, Adegbola RA. Etiology of severe childhood pneumonia in the Gambia, West Africa, determined by conventional and molecular microbiological analyses of lung and pleural aspirate samples. *Clinical Infectious Diseases*. 2014 Sep 1;59(5):682-5.
278. Rodó X, Curcoll R, Robinson M, Ballester J, Burns JC, Cayan DR, **Lipkin WI**, Williams BL, Couto-Rodriguez M, Nakamura Y, Uehara R, Tanimoto H, Morguá JA. Tropospheric winds from northeastern China carry the etiologic agent of Kawasaki disease from its source to Japan. *Proceedings of the National Academy of Sciences*. 2014 Jun 3;111(22):7952-7.
279. Mishra N, Pereira M, Rhodes RH, An P, Pipas JM, Jain K, Kapoor A, Briese T, Faust PL, **Lipkin WI**. Identification of a novel polyomavirus in a pancreatic transplant recipient with retinal blindness and vasculitic myopathy. *Journal of Infectious Diseases*. 2014 Nov 15;210(10):1595-9.



280. **Lipkin WI**. Investigating a mystery disease: Tales from a viral detective. *Journal of Virology*. 2014 Nov; 88(21): 12176–12179.
281. Tokarz R, Williams S, Sameroff S, Sanchez-Leon M, Jain K, **Lipkin WI**. Virome analysis of *Amblyomma americanum*, *Dermacentor variabilis*, and *Ixodes scapularis* ticks reveals novel highly divergent vertebrate and invertebrate viruses. *Journal of Virology*. 2014 Jul 23. pii: JVI.01858-14.
282. Alagaili AN, Briese T, Karesh WB, Daszak P, **Lipkin WI**. Reply to "Concerns about misinterpretation of recent scientific data implicating dromedary camels in epidemiology of Middle East respiratory syndrome (MERS)". *mBio*. 2014 Jul 8;5(4).
283. Honkavuori KS, Briese T, Krauss S, Sanchez MD, Jain K, Hutchison SK, Webster RG, **Lipkin WI**. Novel coronavirus and astrovirus in Delaware Bay shorebirds. *PLoS One*. 2014 Apr 3;9(4):e93395.
284. Uccellini L, Ossiboff RJ, de Matos REC, Morrissey JK, Petrosov A, Navarrete-Macias I, Jain K, Hicks AL, Buckles EL, Tokarz R, McAloose D, **Lipkin WI**. Identification of a novel nidovirus in an outbreak of fatal respiratory disease in ball pythons (*Python regius*). *Virology Journal*. 2014 Aug 8;11:144.
285. Firth C, Bhat M, Firth MA, Williams SH, Frye MJ, Simmonds P, Conte JM, Ng J, Garcia J, Bhuva NP, Lee B, Che X, Quan PL, **Lipkin WI**. Detection of zoonotic pathogens and characterization of novel viruses carried by commensal *Rattus norvegicus* in New York City. *mBio*. 2014 Oct 14;5(5). pii: e01933-14.
286. Duale N, **Lipkin WI**, Briese T, Aarem J, Rønningen KS, Aas KK, Magnus P, Harbak K, Susser E, Brunborg G. Long-term storage of blood RNA collected in RNA stabilizing Tempus tubes in a large biobank - evaluation of RNA quality and stability. *BMC Research Notes*. 2014 Sep 12;7(1):633.
287. Roossinck MJ, Suttle C, Wilson W, Amy PS, Andino R, Bao Y, Belshaw R, Bordenstein S, Brussaard C, Dolj V, Duffy S, Edwards R, Holtz L, Johnson W, Kristensen D, Lang A, **Lipkin WI**, Melcher U, Pipas J, Schneider W, Segall A, Stedman K, Weitz J, Wommack E, Young M. Report on American Academy of Microbiology Colloquium. *Viruses throughout life & Time: Friends, Foes, Change Agents*. July 2013.
288. Gordon CL, Tokarz R, Briese T, **Lipkin WI**, Jain K, Whittier S, Shah J, Connolly ES, Yin MT. Evaluation of a multiplex polymerase chain reaction for early diagnosis of ventriculostomy-related infections. *Journal of Neurosurgery*. 2015 Dec;123(6):1586-92.
289. Bresnahan M, Hornig M, Schultz AF, Gunnes N, Hirtz D, Lie KK, Magnus P, Reichborn-Kjennerud T, Roth C, Schjølberg S, Stoltenberg C, Surén P, Susser E, **Lipkin WI**. Association of Maternal Report of Infant and Toddler Gastrointestinal Symptoms With Autism: Evidence From a Prospective Birth Cohort. *JAMA Psychiatry*. 2015 May;72(5):466-74.
290. Frye MJ, Firth C, Bhat M, Firth MA, Che X, Lee D, Williams SH, **Lipkin WI**. Preliminary Survey of Ectoparasites and associated pathogens from Norway rats in New York City. *Journal of Medical Entomology*. 2015 Mar;52(2):253-9.
291. Seimon TA, Olson SH, Lee KJ, Rosen G, Ondzie A, Cameron K, Reed P, Anthony SJ, Joly DO, Karesh WB, McAloose D, **Lipkin WI**. Adenovirus and herpesvirus diversity in free-ranging great apes in the Sangha region of the Republic of Congo. *PLoS One*. 2015 Mar 17;10(3):e0118543.
292. Surén P, Schjølberg S, Øyen AS, Lie KK, Hornig M, Bresnahan M, Bakke T, Roth C, Alsakera E, Schreudera P, Stenberg N, Reichborn-Kjennerud T, Hirtz D, Susser E, Magnus P, **Lipkin WI**, Stoltenberg C. The Autism Birth Cohort (ABC): A study of autism spectrum disorders in MoBa. *Norsk Epidemiologi* 2014; 24 (1-2): 39-50 39.
293. Ly N, Tokarz R, Mishra N, Sameroff S, Jain K, Rachmat A, An US, Newell S, Harrison DJ, **Lipkin WI**. Multiplex PCR analysis of clusters of unexplained viral respiratory tract infection in Cambodia. *Virology Journal*. 2014 Dec 17;11:224.





294. Johnston SC, Briesse T, Bell T, Shamblin JD, Esham HL, Donnelly GC, Johnson JC, Hensley LE, **Lipkin WI**, Honko AN. Detailed analysis of the African green monkey model of Nipah virus. *PLOS One*. 2015 Feb 23; 10(2): e0117817.
295. **Lipkin WI**, Anthony SJ. Virus Hunting. *Virology 60th Anniversary Issue*. May 2015 479-480(1): 194-199.
296. Scheel TKH, Kapoor A, Nishiuchi E, Brock KV, Yu Y, Andrus L, Gu M, Renshaw RW, Dubovi EJ, McDonough SP, Van de Walle GR, **Lipkin WI**, Divers TJ, Tennant BC, Rice CM. Characterization of nonprimate hepacivirus and construction of a functional molecular clone. *Proceedings of the National Academy of Sciences*. 2015 Feb 17;112(7):2192-7.
297. Hornig M, Montoya JG, Klimas NG, Levine S, Felsenstein D, Bateman L, Peterson DL, Gottschalk CG, Schultz AF, Che X, Eddy ML, Komaroff AL, **Lipkin WI**. Distinct plasma immune signatures in ME/CFS are present early in the course of illness. *Science Advances*. 2015 Feb 1: 1(1):e1400121.
298. **Lipkin WI**. A vision for investigating the microbiology of health and disease. Hilary Koprowski Symposium Supplement, *Journal of Infectious Diseases*. *Journal of Infectious Diseases*. 2015 Jul 15;212 Suppl 1:S26-30.
299. Hornig M, Gottschalk G, Peterson DL, Knox KK, Schultz AF, Eddy ML, Che X, **Lipkin WI**. Cytokine network analysis of cerebrospinal fluid in myalgic encephalomyelitis/chronic fatigue syndrome. *Mol Psychiatry*. 2016 Feb;21(2):261-9.
300. Masson L, Passmore JA, Liebenberg LJ, Werner L, Baxter C, Arnold KB, Williamson C, Little F, Mansoor LE, Naranbhai V, Lauffenburger DA, Ronacher K, Walzl G, Garrett NJ, Williams BL, Couto-Rodriguez M, Hornig M, **Lipkin WI**, Grobler A, Karim QA, Karim SS. Genital inflammation and the risk of HIV acquisition in women. *Clinical Infectious Diseases*. 2015 Jul 15;61(2):260-9.
301. Palacios G, Wiley M, Travassos da Rosa APA, Guzman H, Quiroz E, Savji N, Carrera JP, Bussetti AV, Ladner J, **Lipkin WI**, Tesh RB. Characterization of the Punta Toro species complex (genus Phlebovirus, family Bunyaviridae). *Journal of General Virology*. 2015 Aug;96(8):2079-85.
302. Palacios T, Bartelt L, Scheld W, Lopes MB, Kelting SM, Stillman L, Holland S, **Lipkin WI**, Quan PL, Borish L, Lawrence M. Fatal Cocksackie B3 meningoencephalitis in a patient with B cell lymphopenia and hypogammaglobulinemia following rituximab therapy. *Annals of Allergy and Immunology*. 2015 Aug;115(2):148-50.
303. Tokarz R, Sameroff S, Hesse RA, Hause BM, Desai A, Jain K, **Lipkin WI**. Discovery of a novel nidovirus in cattle with respiratory disease. *Journal of General Virology*. 2015 Aug;96(8):2188-93.
304. Anthony SJ, Islam A, Johnson C, Navarrete-Macias I, Liang E, Jain K, Hitchens PL, Che X, Soloyvov A, Hicks AL, Ojeda-Flores R, Zambrana-Torrel C, Ulrich W, Rostal MK, Petrosov A, Garcia J, Haider N, Wolfe N, Goldstein T, Morse SS, Rahman M, Epstein JH, Mazet J, Daszak P, **Lipkin WI**. Non-random patterns in viral diversity. *Nature Communications*. 2015 Sep 22;6: 8147.
305. Anthony SJ, St. Leger J, Liang E, Hicks A, Sanchez-Leon M, Jain K, Lefkowitz J, Navarrete-Macias I, Knowles N, Goldstein T, Pugliarès K, Ip H, Rowles T, **Lipkin WI**. Discovery of a novel hepatovirus (phopivirus of seals) related to human hepatitis A virus. *mBio*. 2015 Aug 25;6(4). pii: e01180-15.
306. **Lipkin WI**. MERS-CoV recombination and the evolution of science and public health in China. *mBio*. 2015 Sep 8;6(5). pii: e01381-15.
307. **Lipkin WI**, Hornig M. Diagnostics and Discovery in Viral Central Nervous System Infections. *Brain Pathology*. 2015 Sep;25(5):600-4.
308. Briesse T, Kapoor A, Mischra N, Jain K, Kumar A, Jabado OJ, **Lipkin WI**. Virome-capture-sequencing (VirCapSeq) enables sensitive viral diagnosis and comprehensive virome analysis. *mBio*. 2015 Sep 22; 6(5):e01491-15.
309. Kapoor A, Kumar A, Simmonds P, Bhuvu B, Chauhan L, Lee B, Sall AA, Jin Z, Morse SS, Shaz





- B, Burbelo PD, **Lipkin WI**. Virome Analysis of Transfusion Recipients Reveals a Novel Human Virus That Shares Genomic Features with Hepaciviruses and Pegiviruses. *mBio*. 2015 Sep 22; 6(5). pii: e01466-15.
310. Magnus P, Gunnes N, Tveito K, Bakken IJ, Ghaderi S, Stoltenberg C, Hornig M, **Lipkin WI**, Trogstad L, Håberg SE. Chronic fatigue syndrome/myalgic encephalomyelitis (CFS/ME) is associated with pandemic influenza infection, but not with an adjuvanted pandemic influenza vaccine. *Vaccine*. 2015 Nov 17;33(46):6173-7.
  311. Kilianski A, Carcel P, Yao S, Roth P, Schulte J, Donarum GB, Fochler ET, Hill JM, Liem AT, Wiley MR, Ladner JT, Pfeffer BP, Elliot O, Petrosov A, Jima DD, Vallard TG, Melendrez MC, Skowronski E, Quan PL, **Lipkin WI**, Gibbons HS, Hirschberg DL, Palacios GF, Rosenzweig CN. Pathosphere.org: Pathogen Detection and Characterization Through a Web-based, Open-source Informatics Platform. *BMC Bioinformatics*. 2015 Dec 29;16(1):416
  312. Tadin A, Tokarz R, Markotic A, Margaletic J, Turk N, Habus J, Svoboda P, Vucelja M, Desai A, Jain K, **Lipkin WI**. Molecular survey of zoonotic agents in rodents and other small mammals in Croatia. *American Society of Tropical Medicine and Hygiene*. 2016 Feb 3;94(2):466-73.
  313. Charles J, Firth AE, Lorono-Pino MA, Garcia-Rejon JE, Farfan-Ale JA, **Lipkin WI**, Blitvich B, Briese T. Merida virus, a novel putative rhabdovirus discovered in *Culex* and *Ochlerotatus* spp. mosquitoes in the Yucatan Peninsula of Mexico. *Journal of General Virology*. 2016 Apr;97(4):977-87.
  314. Duan ZJ, Yu JM, Li LL, Zhang CY, Lu S, Ao YY, Gao HC, Xie ZP, Xie GC, Sun XM, Pang LL, Xu JG, **Lipkin WI**. A novel hepatovirus identified in wild woodchuck *Marmota himalayana*. *Scientific Reports*. 2016 Feb 29;6:22361.
  315. Richard M, Kabuusuach E, Mishra N, Briese T, Zody MC, Tsofack JEK, Zamostiano R, Berkowitz A, Ng J, Nitido A, Corvelo A, Toussaint Nc, Abel Nielson SC, Hornig M, Del Pozo J, Bloom T, Ferguson H, Eldar A, **Lipkin WI**. Characterization of a novel orthomyxo-like virus causing mass die-offs of Tilapia. *mBio*. 2016 Apr 5;7(2). pii: e00431-16.
  316. Del Pozo J, Mishra N, Kabuusu RN, Cheetham Brow S, Eldar A, Bacharach E, **Lipkin WI**, Ferguson HW. Syncytial hepatitis of tilapia (*Oreochromis niloticus* L.) is associated with orthomyxovirus-like virions in hepatocytes. *Veterinary Pathology*. 2017 Jan;54(1):164-170.
  317. Duran-Struuck R, Sondermeijer HP, Bühler L, Zitsman J, Kato Y, Wu A, Alonso-Guallart P, McMurchy A, Woodland D, Griesemer A, Martinez M, Boskovic S, Kawai T, Cosimi AB, Wu CC, Slate A, Baker S, Tokarz R, d' Agati V, Hammer S, Pereira M, **Lipkin WI**, Wekerle W, Levings L, Sykes M. Effect of ex vivo Expanded Recipient Regulatory T Cells on Hematopoietic Chimerism and Kidney Allograft Tolerance Across MHC Barriers in Cynomolgus Macaques. *Transplantation*. 2017 Feb;101(2):274-283.
  318. Wray AK, Olival KJ, Morán D, Lopez MR, Alvarez D, Navarrete-Macias I, Liang E, Simmons NB, **Lipkin WI**, Daszak P, Anthony SJ. Viral Diversity, Prey Preference, and Bartonella Prevalence in *Desmodus rotundus* in Guatemala. *Ecohealth*. 2016 Dec;13(4):761-774.
  319. Briese T, Williams DT, Kapoor V, Diviney SM, Certoma A, Wang J, Johansen CA, Chowdhary R, Mackenzie JS, **Lipkin WI**. Analysis of Arbovirus Isolates from Australia Identifies Novel Bunyaviruses Including a Mapputta Group Virus from Western Australia That Links Gan Gan and Maprik Viruses. *PLoS One*. 2016 Oct 20;11(10):e0164868.
  320. Tsofack JK, Zamostiano R, Watted S, Berkovitz A, Rosenbluth E, Mishra N, Briese T, **Lipkin WI**, Kabuusu RM, Ferguson H, Del Pozo J, Eldar A, Bacharach E. Detection of Tilapia Lake Virus (TiLV) in Clinical Samples by Culturing and Nested RT-PCR. *Journal of Clinical Microbiology*. 2017 Mar;55(3):759-767.
  321. Tang JW, Koopmans MP, Lam TT, Zaraket H, **Lipkin WI**, Jean-Michel Heraud, and the INSPIRE investigators. The global epidemiology of non-influenza respiratory viruses: data gaps and a growing need for surveillance. *Lancet Infectious Diseases*. 2017 Apr 28. pii: S1473-3099(17)30238-4.
  322. Hornig M, Gottschalk G, Eddy ML, Che X, Ukaigwe JE, Peterson DL, **Lipkin WI**. Immune



- network analysis of cerebrospinal fluid in myalgic encephalomyelitis/chronic fatigue syndrome with atypical and classical presentations. *Translational Psychiatry*. 2017 Apr 4;7(4):e1080.
323. Mahic M, Mjaaland S, Bøvelstad HM, Gunnes N, Susser E, Bresnahan M, Øyen AS, Levin B, Che X, Hirtz D, Reichborn-Kjennerud T, Scholberg S, Roth C, Magnus P, Stoltenberg C, Surén P, Hornig M, **Lipkin WI**. Maternal Immunoreactivity to Herpes Simplex Virus-2 and Risk of Autism Spectrum Disorder in Male Offspring. *mSphere*. 2017 Feb 22; 2(1) e00016-17.
  324. Tokarz R, Tagliaferro T, Cucura, DM, Rochlin I, Sameroff S, **Lipkin WI**. Detection of *Anaplasma phagocytophilum*, *Babesia microti*, *Borrelia burgdorferi*, *Borrelia mitamotai*, and Powassan virus in ticks by a multiplex real-time RT-PCR assay. *mSphere*. 2017 Apr 19;2(2). pii: e00151-17.
  325. Anthony SJ, Gilardi K, Menachery VD, Goldstein T, Ssebide B, Mbabazi R, Navarrete-Macias I, Liang E, Wells H, Hicks A, Petrosov A, Byarugaba DK, Debbink K, Dinno KH, Scobey T, Randell SH, Young BL, Cranfield M, Johnson CK, Baric RS, **Lipkin WI**, Mazaet JA. Further evidence for bats as the evolutionary source of Middle East Respiratory Syndrome Coronavirus. *MBio*. 2017 Apr 4;8(2):e00373-17.
  326. Hornig M, Bresnahan M, Che X, Schultz A, Ukaigwe J, Eddy M, Hirtz D, Gunnes N, Lie K, Magnus P, Mjaalan S, Reichborn-Kjennerud, Scholberg S, Øyen A-S, Levin B, Susser E, Stoltenberg C, **Lipkin WI**. Prenatal fever and autism risk. *Molecular Psychiatry*. 2017 Jun 13. Doi:10.1038/mp.2017.119.
  327. Formisano S, Hornig M, Yaddanapudi K, Vasishtha M, Parsons L, Briesse T, **Lipkin WI**, Williams B. Central Nervous System Infection with Bornavirus Causes Kynurenine Pathway Dysregulation and Neurotoxic Quinolinic Acid Production. *Journal of Virology*. 2017 Apr 26. pii: JVI.00673-17.
  328. Nagy-Szakal D, Williams BL, Mishra N, Che X, Lee B, Bateman L, Klimas NG, Komaroff AL, Levine S, Montoya JG, Peterson DL, Ramanan D, Jain K, Eddy ML, Hornig M, **Lipkin WI**. Fecal metagenomic profiles in subgroups of patients with myalgic encephalomyelitis/chronic fatigue syndrome. *Microbiome*. 2017 Apr 26;5(1):44.
  329. Anthony SJ, Johnson CK, Greig DJ, Kramer S, Che X, Wells H, Hicks AL, Joly DO, Wolfe ND, Daszak P, Karesh W, **Lipkin WI**, Morse SS, PREDICT Consortium, Mazet JAK, Goldstein T. Global patterns in coronavirus diversity. *Virus Evolution*. 2017 Jun 12;3(1):vex012.
  330. Billerbeck E, Wolfisberg R, Fahnøe U, Xiao JW, Quirk C, Luna JM, Cullen JM, Hartlage AS, Chiriboga L, Ghoshal K, **Lipkin WI**, Bukh J, Scheel TKH, Amit Kapoor A, Rice CM. Mouse models of acute and chronic hepatitis C virus infection. *Science*. 2017 Jul 14;357(6347):204-208.
  331. Johansen CA, Williams SH, Melville LF, Nicholson J, Hall RA, Bielefeldt-Ohmann H, Prow N, Chidlow GR, Wong S, Sinha R, Williams DT, **Lipkin WI**, Smith DW. Characterization of Fitzroy River virus, a novel flavivirus in the yellow fever virus group, with evidence of human and animal infection. *Emerging Infectious Diseases*. 2017 Aug;23(8):1289-1299.
  332. Havdahl KA, Bishop SL, Surén P, Øyen AS, Lord C, Pickles A, von Tetzchner S, Schjølberg S, Gunnes N, Hornig M, **Lipkin WI**, Susser E, Bresnahan M, Magnus P, Stenberg N, Reichborn-Kjennerud T, Stoltemberg C. The influence of parental concern on the utility of autism diagnostic instruments. *Autism Research*. 2017 Jun 22.
  333. Kennedy P, Quan PL, **Lipkin WI**. Viral Encephalitis of Unknown Cause: Current Perspective and Recent Advances. *Viruses*. 2017 Jun 6;9(6). pii: e138.
  334. Briesse T, Lorono-Pino M, Garcia-Rejon J, Farfan-Ale JA, Machain-Williams C, Dorman K, **Lipkin WI**, Blitvitch B. Complete genome sequence of T'Ho virus, a novel putative flavivirus from the Yucatan Peninsula of Mexico. *Virology Journal*. 2017 Jun 12;14(1):110.
  335. Mahic M, Che X, Susser E, Levin B, Reichborn-Kjennerud T, Magnus P, Stoltenberg C, Chauhan L, Briesse T, Bresnahan M, Surén P, Hornig M, Mjaaland S, **Lipkin WI**. Epidemiological and serological investigation into the role of gestational maternal influenza virus infection and autism spectrum disorders. *mSphere*. 2017 Jun 21;2(3). pii: e00159-17.
  336. Trivedi S, Murthy S, Sharma H, Hartlage AS, Kumar A, Gadi S, Simmonds P, Chauhan LV, Scheel TKH, Billerbeck E, Burbelo PD, Rice CM, **Lipkin WI**, Vendergrift K, Cullen JM, Kapoor A.



- Viral persistence, liver disease and host response in hepatitis C-like virus rat model. *Hepatology*. 2017 Aug 31. doi: 10.1002/hep.29494.
337. Ystrom E, Gustavson K, Brandlistuen R, Knudsen GP, Magnus P, Susser E, Davey Smith, G, Stoltenberg, C, Surén P, Håberg S, Hornig M, **Lipkin WI**, Nordeng, H, Reichborn-Kjennerud T. Prenatal Exposure to Acetaminophen and Risk of ADHD. *Pediatrics*. 2017 Nov;140(5). pii: e20163840. doi: 10.1542/peds.2016-3840.
  338. Fullerton HJ, Luna JM, Wintermark M, Hills NK, Tokarz R, Li Y, Glaser C, DeVeber GA, **Lipkin WI**, Elkind MSV; and the VIPS Investigators. Parvovirus B19 Infection in Children with Arterial Ischemic Stroke. *Stroke*. 2017 Oct;48(10):2875-2877. doi: 10.1161/STROKEAHA.117.018272.
  339. Peterson AC, Ghersi BM, Alsa F, Firth C, Frye MJ, Bai Y, Osikowicz LM, Riegel C, **Lipkin WI**, Kosoy MR, Blum MJ. Rodent-borne bartonella infection varies according to host species within and among cities. *EcoHealth*. 2017 Dec;4(14):771-782.
  340. Anderson ME, Nagy-Szakal D, Jain K, Patrone CC, Frattini MG, **Lipkin WI**, Geskin LJ. Highly Sensitive Virome Capture Sequencing Technique VirCapSeq-VERT Identifies Partial Noncoding Sequences but no Active Viral Infection in Cutaneous T-Cell Lymphoma. *J Invest Dermatology*. 2018 Feb. pii: S0022-202x(18)30107-6.
  341. Divers TJ, Tennant BC, Kumar A, McDonough S, Cullen J, Bhuva N, Jain K, Chauhan LS, Scheel TKH, **Lipkin WI**, Laverack M, Trivedi S, Srinivasa S, Beard L, Rice CM, Burbelo PD, Renshaw RW, Dubovi E, Kapoor A. New parvovirus associated with serum hepatitis in horses after inoculation of common biological product. *Emerg Infect Dis*. 2018 Feb;24(2):303-310.
  342. Tokarz R, Mishra N, Tagliafierro T, Sameroff S, Caciula A, Chauhan L, Patel J, Sullivan E, Gucwa A, Fallon B, Golightly M, Molins C, Schrieffer M, Marques A, Briese T, **Lipkin WI**. A multiplex serologic platform for diagnosis of tick-borne diseases. *Sci Rep*. 8(1):3158.
  343. Tokarz R, Sameroff S, Tagliafierro T, Jain K, Williams S, Cucura DM, Rochlin I, Monzon, J, Carpi G, Tufts D, Diuk-Wasser M, Brinkerhoff R, **Lipkin WI**. Identification of novel viruses in *Amblyomma americanum*, *Dermacentor variabilis* and *Ixodes scapularis* ticks. *mSphere*. 2018 Mar/Apr;3(2): e614-17.
  344. Mishra N, Caciula A, Price A, Thakkar R, Ng J, Chauhan LV, Jain K, Che X, Espinosa DA, Montoya Cruz M, Balmaseda A, Sullivan EH, Patel J, Jarman RG, Rakeman JL, Egan CT, Reusken CBEM, Koopmans MPG, Harris E, Tokarz R, Briese T, **Lipkin WI**. Diagnosis of zika virus infection by peptide array and enzyme-linked immunosorbent assay. *mBio*. 2018 Mar;9(2).
  345. Williams SH, Che X, Garcia JA, Klena JD, Lee B, Muller D, Ulrich W, Corrigan RM, Nichol S, Jain K, **Lipkin WI**. Viral diversity of house mice in New York City. *mBio*. 2018 Apr;9(2).
  346. Williams SH, Che X, Paulick A, Guo C, Lee B, Muller D, Uhlemann AC, Lowy FD, Corrigan R, **Lipkin WI**. New York City house mice (*Mus musculus*) as potential reservoirs for pathogenic bacteria and antimicrobial resistance determinants. *mBio*. 2018 Apr;9(2).
  347. Hicks A, Lee KJ, Couto-Rodriguez M, Patel J, Sinha R, Guo C, Olson S, Seimon A, Seimon T, Ondzie AU, Karesh W, Reed P, Cameron KN, **Lipkin WI**, Williams BL. Gut Microbiomes of Wild Great Apes Fluctuate Seasonally in Response to Diet. *Nature*. 2018 May;9(1):1-18.
  348. Alagaili AN, Briese T, Omar NMS, Mohammed OB, **Lipkin WI**. Waterpipe Smoking as a Public Health Risk: Potential Risk for Transmission of MERS-CoV. *Saudi Journal of Biological Sciences*. 2018 May. *In press*.
  349. Nagy-Szakal D, Barupal D, Lee B, Che X, Williams B, Kahn E, Ukaigwe J, Bateman L, Klimas N, Komaroff A, Levine S, Montoya J, Peterson D, Levin B, Hornig M, Fiehn O, **Lipkin WI**. Insights into myalgic encephalomyelitis/chronic fatigue syndrome phenotypes through comprehensive metabolomics. *Scientific Reports*. 2018 July;8(10056):1-11.
  350. Cummings MJ, Tokarz R, Bakamutumaho B, Kayiwa J, Byaruhanga T, Owor N, Namagambo B, Wolf A, Mathema B, Lutwama JJ, Schluger NW, **Lipkin WI**, O'Donnel MR. Precision surveillance for viral respiratory pathogens: virome capture sequencing for the detection and genomic characterization of severe acute respiratory infection in Uganda. *Clin Infect Dis*. 2018 August.
  351. Williams SH, Cordey S, Bhuva N, Laubscher F, Hartley MA, Boillat-Blanco N, Mbarack Z,



- Samaka J, Mlaganile T, Jain K, d'Acremont V, Kaiser L, **Lipkin WI**. Investigation of the Plasma Virome from Cases of Unexplained Febrile Illness in Tanzania from 2013 to 2014: a Comparative Analysis between Unbiased and VirCapSeq-VERT High-Throughput Sequencing Approaches. *mSphere*. 2018 August;3(4).
352. Goldstein T, Anthony SJ, Gbakima A, Bird BH, Bangura J, Termeau-Bravard A, Belaganahalli MN, Wells HL, Dhanota JK, Liang E, Grodus M, Jangra RK, DeJesus VA, Lasso G, Smith BR, Jambai A, Kamara BO, Kamara S, Bangura W, Monagin C, Shapira S, Johnson CK, Sayols K, Rubin EM, Chandran K, **Lipkin WI**, Mazet JAK. The discovery of Bombali virus adds further support for bats as hosts of ebolaviruses. *Nat Microbiol*. 2018 October;3(10):1084-1089.
  353. Franke N, Bette M, Marquardt A, Briesse T, **Lipkin WI**, Kurz C, Ehrenreich J, Mack E, Baying B, Benes V, Rodepeter FR, Neff A, Teymoortash A, Eivazi B, Geisthoff U, Stuck BA, Bakowsky U, Mandic R. Virome Analysis Reveals No Association of Head and Neck Vascular Anomalies with an Active Viral Infection. *In Vivo*. 2018 Nov;32(6) 1323-1331.
  354. Allicock OM, Guo C, Uhlemann AC, Whittier S, Chauhan LV, Garcia J, Price A, Morse SS, Mishra N, Briesse T, **Lipkin WI**. BacCapSeq: a Platform for Diagnosis and Characterization of Bacterial Infections. *mBio*. 2018 Oct;9:e02007-18.
  355. **Lipkin WI**. Maternal prenatal Tdap not associated with autism development in the child. *J Pediatr*. 2019 Jan;204:320-323.
  356. Kim KW, Horton J, Pan CNI, Jain K, Leung P, Isaacs S, Bull R, Luciani F, Wilkins M, Catteau J, **Lipkin WI**, Rawlinson W, Briesse T. Higher abundance of enterovirus: A species in the gut of children with islet autoimmunity. *Scientific Reports*. 2019 Feb 11;9(1):1749.
  357. Souza TML, Vieira YR, Delatorre E, Barbosa-Lima G, Luiz RLF, Vizzoni A, Jan K, Miranda MM, Bhuva N, Gogarten JF, Ng J, Thakkar R, Calheiros AS, Monteiro APT, Bozz PT, Bozza FA, Tschoeke DA, Leomil L, de Medonça MCL, dos Santos Roddrigues CD, Torres MC, de Filippis AMB, Nogueira RMR, Thompson FL, Lemos C, Durovni B, Cerbino-Neto J, Morel CM, **Lipkin WI**, Mishra N. Emergence of the East-Central-South African genotype of Chikungunya virus in Brazil and the city of Rio de Janeiro may have occurred years before surveillance detection. *Scientific Reports*. 2019 Feb;(9):2760.
  358. Price A, Caciula, Guo C, Lee B, Morrison J, Rasmussen A, **Lipkin WI**, Jain K. DEvis: an R package for aggregation and visualization of differential expression data. *BMC Bioinformatics*. 2019 Mar;20(110).
  359. Gogarten JF, Ulrich M, Bhuva N, Garcia J, Jain K, Lee B, Löhrich T, Oleynik A, Couacy-Hymann E, Neba TF, Mishra N, Briesse T, Calvignac-Spencer S, **Lipkin WI**, Leendertz FH. A Novel Orthohepadnavirus Identified in a Dead Maxwell's Duiker (*Philantomba maxwellii*) in Taï National Park, Côte d'Ivoire. *Viruses*. 2019 Mar;(11):279.
  360. Tokarz R, Tagliafierro T, Sameroff SC, Cucura DM, Oleynik A, Che X, Jain K, **Lipkin WI**. Microbiome analysis of *Ixodes scapularis* ticks from New York and Connecticut. *Ticks and Tick-borne Diseases*. 2019 Apr. *In press*.
  361. Mishra N, Fagbo SF, Alagalli AN, Nitido A, Williams SH, Ng J, Lee B, Durosiniyorun A, Garcia JA, Jain K, Kapoor V, Epstein HJ, Breise T, Memish ZA, Olival KJ, **Lipkin WI**. A viral metagenomic survey identifies known and novel mammalian viruses in bats from Saudi Arabia. *PLoS ONE*. 2019 Apr;14(4):e0214227.
  362. Surén P, Saasen-Havdahl A, Bresnahan M, Hirtz D, Hornig M, Lord C, Reichborn-Kjennerud T, Schjøberg S, Øye AS, Magnus P, Susser E, **Lipkin WI**, Stoltenberg C. Sensitivity and specificity of early screening for autism. *BJPsych Open*. 2019 Jun;5(e41):1-8.
  363. Sameroff S, Tokarz R, Charles R, Jain K, Oleynik A, Che X, Georges K, Carrington C, **Lipkin WI**, Oura C. Viral Diversity of Tick Species Parasitizing Cattle and Dogs in Trinidad and Tobago. *Sci Rep*. 2019 Jul. *In press*.
  364. Das P, Sazzad HMS, Aleem MA, Rahman MZ, Rahman M, Anthony SJ, **Lipkin WI**, Gurley ES, Luby SP, Openshaw JJ. Hospital-based zoonotic disease surveillance in Bangladesh: design, field data and difficulties. *Phil. Trans. R. Soc. B*. 2019 Aug;374:20190019.





365. Mishra N, Ng TFF, Marine RL, Jain K, Nj J, Thakkar R, Caciula A, Price A, Garcia JA, Burns JC, Thakur KT, Hetzler KL, Routh JA, Konopka-Anstadt JL, Nix WA, Tokarz R, Brieze T, Oberste MS, **Lipkin WI**. Antibodies to Enteroviruses in Cerebrospinal Fluid of Patients with Acute Flaccid Myelitis. *mBio*. 2019 Aug;10:e01903-19.
366. Alonso-Guallart P, Duran-Struuck R, Zitsman JS, Sameroff S, Pereira M, Stern J, Berglund E, Llore N, Pierre G, Lopes E, Kofman SB, Danton M, Sondermeijer HP, Woodland D, Kato Y, Ekanayake-Alper DK, Iuga AC, Wu, CS, Wu A, **Lipkin WI**, Tokarz R, Sykes M, Griesemer A. Impact of CMV Reactivation, Treatment Approaches and Immune Reconstitution in a Nonmyeloablative Tolerance Induction Protocol in Cynomolgus Macaques. *Transplantation*. 2019 Aug. *In press*.
367. Williams SH, Che X, Oleynik A, Garcia JA, Muller D, Zabka TS, Firth C, Corrigan RM, Brieze T, Jain K, **Lipkin WI**. Discovery of two highly divergent negative-sense RNA viruses associated with the parasitic nematode, *Capillaria hepatica*, in wild *Mus musculus* from New York City. *Journal of General Virology*. 2019 Sept. *Epub ahead of print*.
368. Mishra N, Ng J, Rakeman JL, Perry MJ, Centurioni DA, Dean AB, Price A, Thakkar R, Garcia Angus A, Williamson P, Delwart E, Carrington C, Sahadeo N, Che X, Brieze T, Tokarz R, **Lipkin WI**. One-step pentaplex real-time polymerase chain reaction assay for detection of Zika, Dengue, Chikungunya, West Nile viruses and a human housekeeping gene. *Journal of Clinical Virology*. 2019 Sept;120:44-50.
369. Menachery VD, Dinno III KH, Yount Jr. BL, McAnarney ET, Gralinski LE, Hale A, Graham RL, Scobey T, Anthony SJ, Wang L, Graham B, Randell SH, **Lipkin WI**, Baric R. Trypsin treatment unlocks barrier for zoonotic bat coronaviruses infection. *Journal of Virology*. 2019 Dec; *In press*.
370. Mishra N, Reslan L, El-Husseini M, Raoof H, Finiano M, Guo C, Thakkar R, Inati A, Dbaiho G, **Lipkin WI**, Zaraket H. Full genome characterization of human G3P[6] and G3P[9] rotavirus strains in Lebanon. *Infect Genet Evol*. 2019 Dec;78:104133.
371. Kim KW, Allen DW, Brieze T, Couper JJ, Barry SC, Golman PG, Cotterill AM, Davis EA, Giles LC, Harrison LC, Harris M, Haynes A, Horton JL, Isaacs SR, Jain K, **Lipkin WI**, McGorm K, Morahan G, Morbey C, Pang ICN, Papenfuss AT, Penno MAS, Sinnott RO, Soldatos G, Thomson RL, Vuillermin P, Wentworth JM, Wilkins MR, Rawlinson WD, Craig ME. Higher frequency of vertebrate-infecting viruses in the gut of infants born to mothers with type 1 diabetes. *Pediatric Diabetes*. 2019 Dec;1-9.
372. William SH, Levy A, Yates RA, Somaweera N, Neville PJ, Nicholson J, Lindsay MDA, Mackenzie JS, Jain K, Imrie A, Smith DW, **Lipkin WI**. Discovery of Jogalong virus, a novel hepacivirus identified in a *Culex annulirostris* (Skuse) mosquito from the Kimberley region of Western Australia. *PLoS ONE*. 2020 Jan;12(1):e0227114.
373. Tokarz R, Tagliafierro, Caciula A, Mishra N, Thakkar R, Chauhan LV, Sameroff S, Delaney S, Wormser GP, Marques A, **Lipkin WI**. Identification of immunoreactive linear epitopes of *Borrelia miyamotoi*. *Ticks and Tick-borne Diseases*. 2020 Jan;11(1):101314.
374. Robertson AH, Mahic M, Savic M, Tunheim G, Hungnes O, Trogstad L, **Lipkin WI**, Mjaaland S. Detection of anti-NS1 antibodies after pandemic influenza exposure: Evaluation of a serological method for distinguishing H1N1pdm09 infected from vaccinated cases. *Influenza Other Respir Viruses*. 2020 Jan
375. Price A, Okumura A, Haddock E, Feldmann F, Meade-White K, Sharma P, Artami M, **Lipkin WI**, Threadgill DW, Feldmann H, Rasmussen AL. Transcriptional Correlates of Tolerance and Lethality in Mice Predict Ebola Virus Disease Patient Outcomes. *Cell Rep*. 2020 Feb;30(6):1702-1713, e1706.
376. Menachery VD, Dinno III KH, Yount Jr BL, McAnarney ET, Gralinski LE, Hale A, Graham RL, Scobey T, Anthony SJ, Wang L, Graham B, Randell SH, **Lipkin WI**, Baric R. Trypsin treatment unlocks barrier for zoonotic bat coronaviruses infection. *J Virol*. 2020 Feb;94(5).
377. Alonso-Guallart P, Duran-Struuck R, Zitsman JS, Sameroff S, Pereira M, Stern J, Berglund E, Llore N, Pierre G, Lopes E, Kofman SB, Danton M, Sondermeijer HP, Woodland D, Kato Y,





Ekanayake-Alper DK, Iuga AC, Wu, CS, Wu A, **Lipkin WI**, Tokarz R, Sykes M, Griesemer A. Impact of CMV Reactivation, Treatment Approaches and Immune Reconstitution in a Nonmyeloablative Tolerance Induction Protocol in Cynomolgus Macaques. Transplantation. 2020 Feb;104(2):270-279.

378. Andersen KG, Rambaut A, **Lipkin WI**, Holms EC, Garry RF. The proximal origin of SARS-CoV-2. Nat Med. 2020 Apr;26(4):450-452.

### **Book Chapters/Books**

1. **Lipkin WI**, Villarreal LPA, Oldstone MBA. Whole animal section in situ hybridization and proteins blotting: New tools in molecular analysis of animal models for human disease. Current Topics in Microbiology and Immunology. 1989; 143:33-54.
2. **Lipkin WI**, Oldstone MBA. Nucleic acid and protein detected morphologically with whole animal sections. In: Animal Virus Pathogenesis: a Practical Approach, ed. MBA Oldstone, IRL Press Ltd., Oxford. 1990.
3. **Lipkin WI**, Wilson MC, Oldstone MBA. Molecular insights into infections of the central nervous system. In: Immunologic Mechanisms in Neurologic and Psychiatric Diseases, ed. BH Waksman, Raven Press, New York. 1990.
4. **Lipkin WI** (1993) Characterization of Borna Disease Virus. In: Molecular and Cellular Mechanisms of Neural-Immune Interactions, eds. FE Bloom, IL Campbell and L Mucke, Elsevier. 1993; 127-131.
5. Koprowski, H and **WI Lipkin**, eds. Borna Disease, Springer-Verlag. 1995.
6. Brieze T, **Lipkin WI**, de la Torre JC. Molecular biology of Borna disease virus. In: Borna Disease, eds. H Koprowski and **WI Lipkin**, Springer-Verlag. 1995; 1-16.
7. Solbrig MV, Fallon JH, **Lipkin WI**. Behavioral disturbances and pharmacology of Borna disease. In: Borna Disease, ed. H Koprowski and **WI Lipkin**, Springer-Verlag, 1995; 93-101.
8. **Lipkin WI**, Schneemann A, Schneider PA, Solbrig MV, Brieze T, Lewis AJ. Borna disease virus: molecular biology and pathogenesis. In: Current Developments in Animal Virology, eds. S Jameel and EK Wagner, Oxford IBH Publishing CO. 1996.
9. Hatalski CG, **Lipkin WI**. Effects of viral pathogens on host nervous systems and behavior. In: Parasites and Pathogens: Effects on Host Hormones and Behaviors, ed. N. Beckage, Chapman & Hall, 1997; 201-209.
10. Schwemmle M, Hatalski CG, Even C, Lewis AJ, **Lipkin WI**. Bornaviruses. In: Persistent Viral Infections, eds. R Ahmed and I Chen, John Wiley & Sons. 2001.
11. Hornig M, Solbrig MV, Horscroft N, Weissenböck H, **Lipkin WI**. Borna disease virus infection of adult and neonatal rats: models for neuropsychiatric disease. In: Current Topics in Microbiology and Immunology, ed. by G Gosztanyi, Springer-Verlag, Berlin, 2001; 157-178.
12. **Lipkin WI**, Hatalski CG. Borna disease virus infections in humans. In: Proceedings of the Seventh International Kilmer Conference. Sterilization of Medical Products, Volume VII, eds. RF Morrissey and JB Kowalski, Polyscience Publications. 1998.
13. **Lipkin WI** and Brieze T. Bornaviruses. Encyclopedia of Life Sciences, Nature, Scientific American Publishing Group. 1998.
14. Hornig M, Weissenböck H, Horscroft N, O'Rourke LM, **Lipkin WI**. Borna disease virus infection of adult and neonatal rats: models for neuropsychiatric disease. In: Proceedings of the Second International Centre for Genetic Engineering and Biotechnology Virology Symposium, eds. S Jameel and LP Villarreal, Oxford IBH Publishing Co. 1999.
15. **Lipkin WI**, Fischer N, Jordan I. Borna disease virus. In: Topley & Wilson's Microbiology and Microbial Infection, ed. B Mahy, Edward Arnold Ltd. 1999.
16. **Lipkin WI**, Hornig M, Horscroft N, Solbrig MV, Weissenböck H. Bornavirus neurotropism: implications for neurobiology. In: Viruses and the Brain, MJ Buchmeier and IL Campbell, eds.



- Academic Press. 2000.
17. **Lipkin WI.** West Nile Virus. In: World Book Multimedia Encyclopedia. 2001.
18. **Lipkin WI,** Brieese T, Hornig M (2001) Borna disease virus. In: Encyclopedia of the Human Brain, ed. VS Ramachandran, Academic Press.
19. **Lipkin WI,** Hornig M, Brieese T. Borna disease virus. In: Encyclopedia of the Neurological Sciences, eds., MJ Aminoff and RB Daroff, Academic Press. 2001.
20. Brieese T, Hornig M, **Lipkin WI.** Borna disease virus. In: Topley & Wilson's Microbiology and Microbial Infection, ed. B Mahy, Edward Arnold Ltd. 2003.
21. Hornig M, **Lipkin WI.** Microbiology and immunology of autism spectrum disorders. In: Autism: Neural Basis and Treatment Possibilities, ed. M Rutter, Novartis Foundation. 2003.
22. Hornig M, Brieese T, **Lipkin WI.** Borna disease virus. *Journal of Neurovirology* 2003; 9:259-273
23. Hornig M, Solbrig M, **Lipkin WI.** Borna disease virus: brain effects. In Encyclopedia of Neuroscience, eds., G Adelman and BH Smith, Elsevier Science. 2003.
24. **Lipkin WI,** Brieese T. Bornaviridae. In: Fields Virology, Fifth Edition. Lippincott Williams and Wilkins. 2007
25. Stitz L, Planz O, **Lipkin WI.** Borna disease virus. In: Encyclopedia of Virology, Third Edition, eds. Brian Mahy and Marc van Regenmorte, Hodder-Arnold. 2006.
26. **Lipkin WI.** Novel diagnostic approaches. In: Viruses and Viral Diseases, ed., Peter Palese, Henry Stewart Talks. 2007.
27. **Lipkin WI,** Brieese T. Pathogen surveillance and discovery. In: Neurotropic Viral Infections, ed., Reiss, Cambridge University Press. 2008.
28. **Lipkin WI.** Autism, infection and immunity. In: Autism and the Environment, Institute of Medicine Press. 2008.
29. **Lipkin WI,** Brieese T. Emerging tools for microbial diagnosis, surveillance and discovery. In: Detection and Surveillance, eds., SM Lemon, PF Sparling, E Choffness and A Mack, Institute of Medicine Press. 2007.
30. **Lipkin WI,** Palacios G, Brieese T. Emerging tools for microbial diagnosis, surveillance and discovery. In: Emerging Infections 9, eds, M Scheld and S Hammer, ASM Press. 2008.
31. **Lipkin WI,** Brieese T. Bornaviruses. In: Encyclopedia of Life Sciences, John Wiley & Sons, Ltd. 2011.
32. Hornig M, **Lipkin WI.** Borna Disease Virus: Brain Effects. In: Encyclopedia of Neuroscience, Elsevier. 2011.
33. **Lipkin WI.** Zoonoses. In: Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases 8, Churchill Livingstone. 2014.
34. **Lipkin WI,** Brieese T. Diagnosis, Discovery and Dissection of Viral Diseases. In: Viral Infections of Humans, Fifth Edition, Springer. 2014.
35. Kapoor A, **Lipkin WI.** Virus Discovery in the 21<sup>st</sup> Century. In: Encyclopedia of Life Sciences. John Wiley & Sons Ltd. 2014.
36. **Lipkin WI.** Foreward. In: Emerging Infections 10, eds, M Scheld, J Hughes, R Whitley, ASM Press. 2016.
37. **Lipkin WI.** Emerging Viruses. In: Viral Pathogenesis: From Basics to Systems Biology, Third Edition, Academic Press, Elsevier. 2016.
38. **Lipkin WI.** Zoonoses. In: Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases 9, Churchill Livingston. 2018.

### **Other Publications**

1. **Lipkin WI** (2011 September 12). The Real Threat of 'Contagion.' *New York Times*, p. A27.



2. **Lipkin WI** (2014 May 20). Will MERS become a global threat? CNN, <http://www.cnn.com/2014/05/20/opinion/lipkin-mers-cases/>.
3. **Lipkin WI** (2014 August 3). Ebola: How Worried Should We Be? Wall Street Journal, p. A13.
4. **Lipkin WI** (2016 April 4). Anti-Vaccination Lunacy Won't Stop. Wall Street Journal, p. A19
5. **Lipkin WI** (2016 September 7). The Coming Trials of Generation Zika. Wall Street Journal, p. A15.

## ISSUED PATENTS

1. Borna disease viral sequences, diagnostics and therapeutics for nervous system diseases  
Patent number: 6015660  
Abstract: The present invention presents: genomic nucleotide sequence of Borna disease virus, nucleotide and amino acid sequences of Borna disease virus proteins, recombinant viral proteins, vectors and cells containing the sequences or encoding the proteins, ligand binding to these proteins such as antibodies, and the diagnostic and therapeutic uses of the foregoing.  
Issued: January 18, 2000  
Inventors: **Lipkin WI**, Briese T, Kliche S, Schneider PA, Stitz L, Schneemann A
2. Borna disease viral sequences, diagnostics and therapeutics for nervous system diseases  
Patent number: 6077510  
Abstract: The present invention presents: genomic nucleotide sequence of Borna disease virus, nucleotide and amino acid sequences of Borna disease virus proteins, recombinant viral proteins, vectors and cells containing the sequences or encoding the proteins, ligand binding to these proteins such as antibodies, and the diagnostic and therapeutic uses of the foregoing.  
Issued: June 20, 2000  
Inventors: **Lipkin WI**, Briese T, Kliche S, Schneider PA, Stitz L, Schneemann A
3. Borna disease viral sequences, diagnostics and therapeutics for nervous system diseases  
Patent number: 6113905  
Abstract: The present invention presents: genomic nucleotide sequence of Borna disease virus, nucleotide and amino acid sequences of Borna disease virus proteins, recombinant viral proteins, vectors and cells containing the sequences or encoding the proteins, ligand binding to these proteins such as antibodies, and the diagnostic and therapeutic uses of the foregoing.  
Issued: September 5, 2000  
Inventors: **Lipkin WI**, Briese T, Kliche S, Schneider PA, Stitz L, Schneemann A
4. Methods and kits for detecting SARS-associated coronavirus  
Patent number: 7582740  
Abstract: The present invention provides a synthetic nucleic acid sequence comprising 10-30 nucleotides of the N gene region and/or the 3' non-coding region of the SARS-associated coronavirus genome, and a synthetic nucleic acid sequence comprising 10-30 nucleotides of a nucleic acid sequence that is complementary to at least one of those regions. Also provided are compositions comprising the sequences, and uses of the sequences in diagnostic kits. The present invention further provides a primer set for determining the presence or absence of SARS-associated coronavirus in a biological sample, wherein the primer set comprises at least one of the synthetic nucleic acid sequences. Also provided are a composition comprising the primer set, and use of the primer set in a diagnostic kit. Finally, the present invention provides kits and methods for determining the presence or absence of SARS-associated coronavirus in a biological sample.  
Issued: September 1, 2009



Inventors: Brieze T, **Lipkin WI**, Palacios G, Jabado O

5. Multiplex systems, methods, and kits for detecting and identifying nucleic acids

Patent number: 8216810

Abstract: The present invention provides systems and methods for determining the presence or absence of one or more target nucleic acid sequences in a sample. Also provided are kits comprising these systems, and uses of these systems in such applications as determining the presence or absence of at least one target nucleic acid sequence in a sample, detecting microorganism transcripts and host transcripts, differentiating microorganism transcripts from host transcripts, screening blood products, assaying a food product for contamination, assaying a sample for environmental contamination, detecting genetically-modified organisms, biodefense, forensics, and genetic-comparability studies. The present invention further provides a complex that includes a target nucleic acid sequence, a capture nucleic acid, and a reporter nucleic acid.

Issued: July 10, 2012

Inventors: **Lipkin WI**, Brieze T, Palacios G, Jabado O

6. Autism-associated biomarkers and uses thereof

Patent number: 9050276

Abstract: The invention discloses biomarkers for human autism. The invention provides methods for treating, preventing, and diagnosing human autism and autism-related disorders.

Issued: June 9, 2015

Inventors: **Lipkin WI**, Hornig M, Williams BL

## LICENSING AGREEMENTS

### **Discovery of a novel virus in farmed salmon with heart and skeletal muscle inflammation (HSMI)**

Agreement #: 38471

Execution Date: 9/13/10

Company Name: Elanco Animal Health (successor to Novartis Animal Health)

Agreement #: 38582

Execution Date: 12/19/11

Company Name: PatoGen analyse AS

### **A new mosquito only alphavirus: sequence and generation of an infectious clone**

Agreement #: 47670

Execution Date: 9/28/15

Company Name: InBios

### **Virome-capture-sequencing (VirCapSeq) for viral diagnosis and virus discovery**

Agreement #: 49112

Execution Date: 1/1/17

Company Name: Roche Sequencing Solutions

### **Bovine respiratory disease diagnostic panel assay using MassTechnology**

Agreement #: 49357

Execution Date: 2017

Company Name: National Agricultural Genotyping Center



**Development of a serological assay for Zika virus infection**

Agreement #: pending

Execution Date: pending

Company Name: PEPperPRINT

**Multiplex Sero-diagnostic platform for tick-borne diseases**

Agreement #: pending

Execution Date: pending

Company Name: PEPperPRINT

**An improved virome-capture sequencing (VirCapSeq) method for viral diagnosis and virus discovery**

Agreement #: pending

Execution Date: pending

Company Name: Grifols Diagnostic Solutions (f. Novartis Diagnostics)

**Bacteria-capture-sequencing (BacCapSeq) for pathogenic bacteria diagnosis and discovery**

Agreement #: pending

Execution Date: pending

Company Name: Grifols Diagnostic Solutions (f. Novartis Diagnostics)



# **EXHIBIT 3**

**UNITED STATES OF AMERICA**  
**BEFORE THE NATIONAL LABOR RELATIONS BOARD**  
**REGION 10**

**AMAZON**

**and**

**RETAIL, WHOLESALE, AND  
DEPARTMENT STORE, LOCAL 932**

Case No. 10-RC-269250

**CERTIFICATION OF DR. W. IAN LIPKIN**

1           1.       I am currently the John Snow Professor of Epidemiology, Professor of Neurology  
2     and Pathology and Cell Biology, and Director of the Center for Infection and Immunity at  
3     Columbia University. I am also a member of the World Health Organization Global Outbreak  
4     Alert and Response Network, which exists to assist countries with disease control efforts by  
5     ensuring rapid and appropriate technical support to affected populations, investigate and  
6     characterize events and assess risks of rapidly emerging epidemic disease threats, and support  
7     national outbreak preparedness by ensuring that responses contribute to sustained containment of  
8     epidemic threats. I have significant expertise dealing with infectious diseases throughout the  
9     world, including the 2003 SARS outbreak and now, the COVID-19 pandemic.

10          2.       Specifically, I have over 30 years of experience in diagnostics, microbial  
11     discovery and outbreak response, have mentored and trained more than 30 students and post-  
12     doctoral fellows and lead a team of over 65 investigators, post-doctoral fellows and research and  
13     support staff in New York City and another 150 across the world. In the 1980s, I identified  
14     AIDS-associated immunological abnormalities and inflammatory neuropathy. I was the first to  
15     use purely molecular methods to identify an infectious agent, developed MassTag PCR and

1 GreeneChip technology and pioneered the use of high throughput sequencing in pathogen  
2 discovery. I and my team implicated West Nile virus as the cause of the encephalitis epidemic in  
3 New York in 1999 and discovered or characterized more than 1500 infectious agents including  
4 Borna disease virus, West Nile virus, LuJo virus and human rhinovirus C. I assisted the WHO  
5 and the Peoples Republic of China during the 2003 SARS outbreak, advised the Kingdom of  
6 Saudi Arabia in addressing the challenge of MERS, and again advised the Peoples Republic of  
7 China during the current COVID-19 pandemic.

8 3. With respect to COVID-19, since the pandemic began, my team and I have  
9 developed PCR and antibody tests, and run clinical trials of convalescent plasma in New York  
10 City and Rio de Janeiro. I have also served as a testing advisor for New York City, part of a  
11 team of experts who spearheaded the opening last month of a new coronavirus testing laboratory  
12 in New York City that seeks to process around 20,000 daily diagnostic tests.

13 4. I have been featured by the New York Times, the Los Angeles Times, Discover  
14 Magazine, Nature Medicine, the History Channel, National Geographic, CNN, Fox, National  
15 Public Radio, Wired, Newsweek, and the Huffington Post on matters related to various infectious  
16 outbreaks across the world, including the COVID-19 pandemic.

17 5. My full Curriculum Vitae is attached.

18 6. Since the pandemic began, I have consulted with Amazon in development of  
19 Amazon's response to the COVID-19 pandemic and development of health and safety protocols  
20 to minimize the risk of transmission of the COVID-19 virus in their workplaces.

21 7. I have reviewed and contributed to Amazon's proposed logistics and safety  
22 protocols as set forth in (b) (6), (b) (7)(C), (b) (7)(A) certification and made the following recommendations: (1)  
23 to enhance air circulation, fans or HEPA filtered air purifiers will be added to tents to ensure a

1 minimum of 12 air exchanges per hour, and (2) staff will ensure will that all election participants  
2 wear masks.

3 8. The COVID risk prevention protocols already in place at the Fulfillment Center  
4 and the proposed election protocols are designed to mitigate risk associated with participating in  
5 an in-person election for anyone participating in the election process from voters to observers to  
6 NLRB personnel.

7 9. Based on my review of the proposed logistics and safety protocols, it is my  
8 medical opinion that the protocols described in (b) (6), (b) (7)(C), (b) (7)(A) certification for the proposed live  
9 union election, together with the requirement for air exchanges and masking described above in  
10 point 7 should minimize the risk of participants from becoming infected as a consequence of  
11 attending the election. I have no additional recommendations at this time for further reducing the  
12 risk of a live union election.

I declare under penalty of perjury that the above is true and correct to the best of my  
knowledge, information, and belief.

Executed on: December 29, 2020

At: New York, New York



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Dr. W. Ian Lipkin, MD

# **EXHIBIT 4**



UNITED STATES OF AMERICA  
BEFORE THE NATIONAL LABOR RELATIONS BOARD  
REGION 10

<u>AMAZON.COM SERVICES LLC</u>	)
	)
Employer,	)
	)
and	)
	)
<u>RETAIL, WHOLESALE AND</u>	)
<u>DEPARTMENT STORE UNION</u>	)
	)
Petitioner.	)
	)
	)

Case No. 10-RC-269250

<u>AMAZON</u>  <u>and</u>  <u>RETAIL, WHOLESALE, AND</u> <u>DEPARTMENT STORE, LOCAL 932</u>	<u>Case No. 10-RC-269250</u>
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CERTIFICATION OF DR. W. IAN LIPKIN

1           1.       I am currently the John Snow Professor of Epidemiology, Professor of Neurology  
2   and Pathology and Cell Biology, and Director of the Center for Infection and Immunity at  
3   Columbia University. I am also a member of the World Health Organization Global Outbreak  
4   Alert and Response Network, which exists to assist countries with disease control efforts by  
5   ensuring rapid and appropriate technical support to affected populations, investigate and  
6   characterize events and assess risks of rapidly emerging epidemic disease threats, and support  
7   national outbreak preparedness by ensuring that responses contribute to sustained containment of

1 epidemic threats. I have significant expertise dealing with infectious diseases throughout the  
2 world, including the 2003 SARS outbreak and now, the COVID-19 pandemic.

3         2.         Specifically, I have over 30 years of experience in diagnostics, microbial  
4 discovery and outbreak response, have mentored and trained more than 30 students and post-  
5 doctoral fellows and lead a team of over 65 investigators, post-doctoral fellows and research and  
6 support staff in New York City and another 150 across the world. In the 1980s, I identified  
7 AIDS-associated immunological abnormalities and inflammatory neuropathy. I was the first to  
8 use purely molecular methods to identify an infectious agent, developed MassTag PCR and  
9 GreeneChip technology and pioneered the use of high throughput sequencing in pathogen  
10 discovery. I and my team implicated West Nile virus as the cause of the encephalitis epidemic in  
11 New York in 1999 and discovered or characterized more than 1500 infectious agents including  
12 Borna disease virus, West Nile virus, LuJo virus and human rhinovirus C. I assisted the WHO  
13 and the Peoples Republic of China during the 2003 SARS outbreak, advised the Kingdom of  
14 Saudi Arabia in addressing the challenge of MERS, and again advised the Peoples Republic of  
15 China during the current COVID-19 pandemic.

16         3.         With respect to COVID-19, since the pandemic began, my team and I have  
17 developed PCR and antibody tests, and run clinical trials of convalescent plasma in New York  
18 City and Rio de Janeiro. I have also served as a testing advisor for New York City, part of a  
19 team of experts who spearheaded the opening last month of a new coronavirus testing laboratory  
20 in New York City that seeks to process around 20,000 daily diagnostic tests.

21         4.         I have been featured by the New York Times, the Los Angeles Times, Discover  
22 Magazine, Nature Medicine, the History Channel, National Geographic, CNN, Fox, National

Public Radio, Wired, Newsweek, and the Huffington Post on matters related to various infectious outbreaks across the world, including the COVID-19 pandemic.

5. My full Curriculum Vitae is attached.

6. Since the pandemic began, I have consulted with Amazon in development of Amazon's response to the COVID-19 pandemic and development of health and safety protocols to minimize the risk of transmission of the COVID-19 virus in their workplaces.

7. I have reviewed and contributed to Amazon's proposed logistics and safety protocols as set forth in (b) (6), (b) (7)(C), (b) (7)(A) certification and made the following recommendations: (1) to enhance air circulation, fans or air HEPA filtered air purifiers will be added to tents to ensure a minimum of 12 air exchanges per hour, and (2) staff will ensure will that all election participants wear masks.

8. The COVID risk prevention protocols already in place at the Fulfillment Center and the proposed election protocols are designed to mitigate risk associated with participating in an in-person election for anyone participating in the election process, ~~including the employee from voters, to observers, and board agents~~ to NLRB personnel.

9. ~~8.~~ Based on my review of the proposed logistics and safety protocols ~~as further described in~~ (b) (6), (b) (7)(C), (b) (7)(A) certification, it is my medical opinion that ~~these~~ the protocols described in (b) (6), (b) (7)(C), (b) (7)(A) for the proposed live union election should ~~protect~~ minimize the risk of participants from becoming infected as a consequence of attending the election. I have no additional recommendations for reducing the risk further.

~~9. As to the employee voters, they have been coming to work since the beginning of the pandemic and will continue to do so. There would be minimal increased risk for the voters~~

1 ~~under the proposed protocols and, most likely, they would work their regular shifts before or~~  
2 ~~after voting.~~

I declare under penalty of perjury that the above is true and correct to the best of my knowledge, information, and belief.

Executed on: December ~~28~~29, 2020

At: New York, New York

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Dr. W. Ian Lipkin, MD